A Plea
FOR
ACCURACY IN THERAPEUTIC DEDUCTION.

Being an Address delivered before the Medico-Chirurgical Society of Nottingham on Jan. 7th, 1925,

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THE science of medicine has admittedly made great strides of recent years. Information as to the processes and causation of disease is steadily accumulating, the art of diagnosis is being constantly facilitated by the introduction of scientific methods of precision, brilliant results are being achieved in the field of preventive medicine, and the pharmacologist is ever adding to our store of knowledge as to the mode of action of the remedies we employ. While this is so it will be generally admitted that the progress of practical therapeutics has been in no way commensurate with the advance in our knowledge of the ætiology, pathology, and diagnosis of disease. I propose to discuss the reasons responsible for this state of affairs and the possibilities of their correction.

THE CLINICIAN RESPONSIBLE FOR THE EVALUATION OF TREATMENT.

The ultimate proof of the value of any remedy can only be established at the bedside. This is a fact which we are too apt to forget. Hypothetical considerations and the results obtained by the laboratory worker are invaluable because of the possibilities and indications they suggest, but the clinician is responsible for the final evidence. We clinicians are, however, in relation to questions of treatment, too often influenced by impressions or by expressions of opinion without analysing the reasons upon which our conclusions are based. Sir James Mackenzie, writing of medical progress, says with truth :—

"If the most enlightened members of our profession were to inquire into the grounds of their beliefs, even those most dearly cherished, how often would they be surprised to find on what fallacies their beliefs are based . . . . the tendency to believe without reason is ever recurring, while the reverence for authority makes us accept statements without proof."

Those of you who have read Sir William Osler's delightful essay on Harvey will recall the lines he quotes which occurred to Henry Sidgwick in his sleep:—

"We think so because all other people think so ;
Or because—or because—after all we do think so ;
Or because we were told so and think we must think so ;
Or because we once thought so, and think we still think so ;
Or because having thought so we think we will think so."

Elsewhere Sir William Osler wrote :—

"It is so much easier to believe than to doubt, for doubt connotes thinking and the expenditure of energy, and often the disruption of the *status quo*. And then we doctors have always been a simple trusting folk! Did we not believe Galen implicitly for 1500 years and Hippocrates for more than 2000? In the matter of treatment the placid faith of the believer, not the fighting faith of the aggressive doubter, has ever been our besetting-sin."

Although the methods of medicine have become so much more scientific there is still much loose thinking and loose talking about treatment. In the interests of progress it is essential that we cultivate the habit of refraining from making assertions which have no true foundation and which may give rise to or perpetuate erroneous and consequently misleading impressions admittedly so difficult to eradicate.

PSEUDO-SCIENTIFIC MEDICINE.

Pseudo-scientific medicine is, indeed, one of the curses of the present day, more especially since it appeals to and misleads the educated layman, for, as Oliver Wendell Holmes points out :—

"Exalted wisdom, immaculate honesty, and vast general acquirements are insufficient to prevent an individual from having the most primitive ideas upon subjects out of his line of thought."

We are too apt to forget that although there is reason for believing that a remedy may do good, we are not justified consequently in assuming that the remedy in question does good until actual proofs are forthcoming. There can be no doubt that the elegant brochures which we are constantly receiving do much to maintain this state of affairs. Here we find extracts from the writings, it may be of eminent scientists, utilised for the purpose of emphasising the indications for treatment which the advertised preparations have been especially designed to meet ; yet when we come to look for the results effected by the preparations in question we seldom discover any reference to facts supporting the vendor's claims, unless perhaps unconvincing and misleading statements by anonymous doctors of medicine who have, no doubt, been well remunerated for their services. To quote, from one of the last articles written by Sir William Osler :—

"We owe a debt to the modern manufacturing pharmacist, who has given us pleasant and potent medicine in the place of nauseous and weak mixtures, ... but even the best are not guiltless of exploiting on the profession the products of a pseudo-science. . . . The length to which organotherapy has extended beyond the legitimate use of certain preparations is a notorious illustration of the ease with which theoretical views place us in a false position. Because thyroid extract cures myxœdema and adrenalin has a powerful action, it has been taken almost for granted that the extract of every organ is a specific against the diseases that affect it. This forcing of a scientific position is most harmful, and I have known an investigator hesitate to publish results lest they should be misapplied in practice. The literature on the subject issued by reputable houses indicates, on the one hand, the pseudo-science upon which a business may be built up, and, on the other, the weak-minded state of the profession on whose credulity these firms trade. . . . For years the profession has been exploited in this way until the evil has become unbearable, and we need as active a crusade against pseudo-science in the profession as has been waged of late (in America?) against the use of quack medicine by the public."

The medical man who is in the habit of "trying" the latest preparation on the market is to be regarded with suspicion, for he does so too often, not with the purpose of attempting to prove the efficacy of the remedy in question, but either because he is unduly credulous or in order to impress his patients and create the belief that he is *au fait* with medical progress.

THE FALLACIES OF EXPERIENCE.

Perhaps some of you may repudiate my imputations and tell me that we know from our experience that the remedies, or many of the remedies, we are in the habit of using, are effective. Doubtless we are often right, but in these days such an answer is insufficient. An assertion unsupported by facts is in itself of uncertain value, since its worth is dependent upon the reliability and judgment of the individual who makes it. It is necessary that we analyse our reasons, for is it not the case that when we form an opinion from experience there must be facts or impressions which have determined our conclusions?

Let me give you an illustration of an every-day habit of thought which demonstrates the possibilities of what I may term an erroneous experience. I treat a patient, let us say, with a certain drug. The patient improves and it may be recovers from his illness. I make most careful observations at the time, and after critically considering the evidence come to the conclusion that, although the facts do not justify a dogmatic statement, there is good reason for believing that the remedy in question has probably—note the

word probably—been responsible for the betterment. Later I meet with other cases of a similar nature. I employ the same remedy, and although I have not considered the facts with the same precision that I did in the first case, I receive the impression and perhaps express the opinion, although, mark you, I have really no additional data which justify me in modifying my original conclusion, that the remedy is useful in cases of the kind. As years go by and my precise observations become hazy and tend to fade from memory I may go so far as to say that this is the drug to use in the treatment of the disease in question. Yet you will observe that my experience does not justify any such assertion. There is, indeed, a natural tendency in the human mind for the wish to be father of the thought. As that wise old physician John Gregory, at one time professor of medicine in Edinburgh, remarked 150 years ago in his "Lectures on the Duties and Qualifications of a Physician," "There is an experience which, however extensive, does not render a physician more sagacious because it is not attended with the necessary observation." In the interests of therapeutic advance it is indeed essential that we cultivate the habit of analysing our reasons and reviewing our experience.

CRITICISM NOT SYNONYMOUS WITH SCEPTICISM.—THE METHOD OF SYDENHAM.

But some of you may say, "If I develop such a critical attitude of mind my pharmacopœia will be so limited." Do not misunderstand me. Criticism and scepticism are not synonymous terms, and must not be confused. I do not for one moment intend to imply, far from it, that we should refrain from employing reputed remedies which there is reason to believe may meet what we believe to be necessary requirements and may do good although their efficacy is as yet unproven. All I ask is, that in the interests of progress we refrain from loose statements and develop our critical faculties in order that we may be in a position to realise and utilise our opportunities should they arise, and thereby perhaps contribute something to the advance of knowledge. The adoption of this attitude will, I venture to say, in no way impair our therapeutic results. Facts are required, and the question is how are these to be obtained.

We have just commemorated the tercentenary of Thomas Sydenham. As Sir Humphry Rolleston says:—

> "Sydenham not only revived but put into practice the dictum that medicine depends on the observation of, not on hypotheses about, disease."

Dr. Arnold Chaplin writes of Sydenham:—

> "He drove home the great truth that the solution of the problem of disease, its manifestations, and its cure must be sought at the bedside by means of observation and inquiry, and not by an appeal to theory and authority sanctified by time."

It is the method of Sydenham applied to treatment which is called for at the present day to advance our knowledge of practical therapeutics. A crusade on these lines would be a fitting tribute to the great master of clinical medicine and help to remove a slur which undoubtedly reflects upon the good name of medicine as a scientific profession.

DIFFICULTIES OF THERAPEUTIC DEDUCTION.

Does a reputed therapeutic agent actually do good? This is the point of essential importance to the clinician. I would class all reputed remedies in two groups: First, those which have been definitely proved by the clinician to be of value in the treatment of disease, and, secondly, those which we believe ought to do good and which may do good although we have no actual proof of their efficacy. Our aim as clinicians must be to attempt to prove the value of the remedies we employ—i.e., to adduce evidence which will enable us to transfer affirmed therapeutic agents from the second group to the first. Facts, I repeat, are what we require.

The difficulties of therapeutic deduction are great and the fallacies numerous. Bedside conclusions are, because of the question of control, much more difficult than are the problems which confront the laboratory worker, although Sir Berkeley Moynihan perhaps exaggerates the position, no doubt wittingly, when he asserts that the difficulties of laboratory research are mere "bumble puppy" as compared with those of clinical deduction. But if we admit that bedside observations are essential to the progress of practical therapeutics, is it not our duty to recognise our responsibilities and face them? If we cannot be certain, let us at least, in the interests of progress, be as certain as we can. Why not look at a question of treatment just as we are accustomed to regard a problem of diagnosis, and if dogmatism is unwarranted consider the data and express our conclusions in terms of probability and possibility?

It is often difficult or impossible to determine whether our remedies have actually done good and whether they are to be credited with any improvement which has occurred in the course of their administration. Our logical faculty is here afforded full scope, and, as an old friend recently said to me, it is perhaps unfortunate that the subject of logic is no longer insisted upon as a necessary preliminary to the study of medicine. I would in this connexion commend to your notice a little book, published in 1864, by Dr. A. W. Barclay, physician to St. George's Hospital, being an expansion of his Lumleian lectures, entitled "Medical Errors or Fallacies connected with the Application of the Inductive Method of Reasoning to the Science of Medicine." The author writes of treatment:—

> "The great difficulty in tracing out the relation of cause and effect consists in the presence of an immense number of circumstances, many of which it is impossible to exclude, while all may contribute more or less to the production or at least the modification of the result."

Speaking of *induction* in relation to the effect of remedies upon the course of diseases, Dr. Barclay says:—

> "Legitimate induction does not demand any lengthy series to prove its truthfulness; but while it assumes a certain familiarity on the part of the observer with the facts bearing on the subject, its distinctive character consists in the discovery of some law which will stand the test of experimental inquiry, and is found true for every case which comes under its operation. If the law fail in any case where the special circumstances to which it relates are present, we ought to be able to show that some higher law interfered with its operation, or else we must abandon the law, or at least hold it in suspense."

Again he remarks:—

> "The number of instances required to frame an induction is, of course, different, just in proportion to the certainty of the progress of the disease without the administration of the special remedy, and the possibility of other causes exerting any influence over it; and also in proportion to the clearness of the evidence by which the causation is established, the quickness or the invariableness with which the effect follows. If, on the other hand, in a few well-marked examples free from complication, the remedy is administered to the full extent of producing its constitutional effects, without arresting the progress of the disease, we may be certain that the supposed law is a false assumption."

We are constantly confronted with what I may term the *post hoc* and *propter hoc* consideration. Some of you may have heard of a method of treatment which I understand was regarded until quite recently, if not at the present day, as an infallible cure for shingles by the Chinese physicians. The medical man likens the patches of vesicles to berries; he paints a representation of a plate upon the surrounding skin and the head of a bird with open beak beside the plate. The vesicles disappear; the berries, he says, have been eaten by the bird. While this is an extreme instance of the *propter hoc*, it serves to illustrate the natural tendency of the human mind to attribute improvement to the measures employed in the treatment of disease when it is often the *vis medicatrix naturæ* which deserves the credit.

Many diseases run an acute course which we know from experience terminates either in death or complete recovery. When the patient survives it is often impossible to decide whether or to what extent the remedial measures employed have assisted the *vis medicatrix naturæ* in determining the result.

There are some acute diseases in which the damage attributable to the pathological process is done within the first few hours or days or weeks of the illness, although after-effects, paralysis for instance, result. While in some of these cases there is a varying degree of gradual improvement and it may be complete recovery, in others there is no tendency to betterment. Under such circumstances it is very often impossible if there is improvement to express an opinion as to what extent, if any, our remedies have assisted the reparatory processes of Nature in effecting the result. Were I to question your reasons for believing, even those of you who have had a considerable experience of organic nervous diseases, that muscular relaxation, massage, and electrical stimulation are of value in the treatment of the flaccid palsies, I venture to think that there are few of you who would be able to give me an answer based upon personal observations which would convince an unbiased mind. Yet you have probably all met with cases of symmetrical paralysis due to a polyneuritis in which control observations are possible. Again, there are certain maladies which are characterised by a chronic progressive course, interrupted it may be by remissions or temporary betterments, dependent upon the nature of the pathological process. Here the clinician must analyse his data with the greatest care before he ventures to assert that the treatment he has employed has been responsible for any improvement which may have occurred.

In times of epidemic, therapeutic conclusions may be vitiated by a change in the type of the disease. Some years ago a discussion upon the treatment of influenza took place before a medical society soon after a serious outbreak of this affection, when the value of several separate remedies was affirmed by individual speakers. The probable explanation was instructive. In the earlier days of the epidemic the mortality, notably from pneumonia, had been high, but later the disease took on a milder form which laboratory observations indicated was probably to be explained by the disappearance of the streptococcus. The diminished mortality, which was attributed by the speakers to the remedies they happened to be using at the moment, was evidently to be accounted for by a change in the type of the disease. Statistics may indeed be quite misleading. Because a series of patients suffering from the same condition recover when treated with a certain remedy this is in itself no proof of the efficacy of the treatment.

THE MENTAL FACTOR.

The mental factor is a common source of fallacy which is difficult to eliminate in estimating the effect of the remedies we use. The potency of suggestion in influencing the patient's mental outlook and his subjective symptoms is indeed generally admitted. We are apt to forget that our every word and action may make an impression upon the patient; it is also to be remembered that individuals vary greatly in their degree of suggestibility. Hence, it is of essential importance that, *in attempting to arrive at conclusions as to the effect of remedies, we remember the possibilities of suggestion* and that we avoid making suggestions which may vitiate our conclusions. Needless to say, no reference should be made as to the manner in which a remedy is supposed to act. Vaccine and, I think I may also say, endocrine therapy are two of the most abused methods of treatment at the present day, since a pseudo-scientific explanation often advanced to explain the anticipated effect of the remedy appeals with especial force to the mind of the uninitiated. Do not misunderstand me. Vaccines and glandular products are, we know, sometimes invaluable, and in the future will no doubt with increasing knowledge come to occupy a more and more prominent place in treatment. But the indiscriminate way in which these measures are sometimes used is no better than pure quackery unless it be excused on the plea of gross ignorance.

I have referred to what I think may be regarded as the two chief difficulties in arriving at therapeutic conclusions—those dependent upon the nature of the disease and upon the mental state respectively, but there are others of lesser importance. Needless to say, change in environment, rest, diet, and freedom from worry are all factors which may favour improvement. Then I may remind you that differences may be observed according to the mode and time of administration and quality of the remedy. Thus we know that certain remedies are more effective when given in solution than in tablet form, while it sometimes happens, although the standardisation of remedies has done much to exclude this fallacy, that the preparation we are employing is comparatively inert as compared with the same preparation obtained from another firm. The remarkable fact that a remedy when first introduced often proves more effective than it does in the hands of subsequent observers is no doubt in some instances, though not always, to be accounted for by the influence of suggestion.

RESPONSIBILITY OF THE CLINICAL TEACHER.

Those of us who are teachers of clinical medicine bear a great responsibility, for we have a dual aim in view. Our purpose should be not only to produce the capable practitioner but at the same time to encourage the spirit of progress in the future generation. We are indeed responsible for creating the critical attitude of mind which is necessary for the advance of practical therapeutics. To quote Sir William Broadbent:—

> "The basis of all clinical facility is observation, that is to say, the intelligent and instructed employment of the senses to obtain the facts, and in close relation with observation is inference, the right interpretation of the facts of observation . . . . a third faculty which is called into existence is discrimination, an analysis and classification of the facts and inferences with due recognition of their significance and relative importance."

The clinical teacher cannot attempt in the time at his disposal, even admitting that he has the knowledge and ability to do so, to give the undergraduate an exhaustive knowledge of the very varied features of disease. Our aim should be to educate his powers of accurate observation and judgment rather than to fill his mind with facts, to see to it that he acquires a knowledge of the methods we employ, to train him to think in terms of disease as met with in the living patient, to instil in him general principles, to show him how to deal with patients, to teach him accuracy of thought and expression, and last, but by no means least, to kindle his enthusiasm. Even at the present day we may recall with advantage the words of John Gregory:—

> "Among the infinite variety of facts and theories with which the physician's mind has been filled in the course of a liberal education it is his business to make a judicious separation between those founded on Nature and experience and those which owe their birth to ignorance, fraud, or the capricious system of a heated and deluded imagination."

But I am speaking especially of treatment. We have here to remember that evidence to the effect that a therapeutic agent has been proved in the laboratory to have a certain action is apt to appeal much more forcibly to the mind of the tyro, who comes to the clinical teacher fresh from his physiological studies, than a statement to the effect that a remedy does good although we know not why. This is an attitude of mind which we are constantly called upon to combat. Sooner or later, however, the student comes to realise that "nothing shows more ignorance of Nature or more self-sufficiency than to reject facts because we cannot account for them" (John Gregory). In the interests of progress it is

incumbent on us to train our students to bring to bear the same faculties of exact observation and inference, the same critical attitude and the same accuracy of expression in relation to treatment that we insist upon in the discussion of a problem of diagnosis. The student must not only be asked his reasons for believing that a remedy is of value in the treatment of a given condition, but he must be constantly called upon for evidence which he himself may have met with in his limited experience; further, he must be asked to discuss the facts in the actual case under consideration and express in as exact terms as possible any justifiable conclusions which can be drawn as to the effects of the treatment which has been employed.

THE GENERAL PRACTITIONER AND THERAPEUTIC ADVANCE.

The very prevalent and unfortunate use of the word research as the equivalent of laboratory methods and laboratory results tends to belittle the importance of clinical observation and is undoubtedly responsible for the general impression that when the young graduate commences general practice he relinquishes for good all opportunity of furthering the advance of medicine. This misconception calls for correction. There are indeed possibilities for furthering advance which are open to the general practitioner, especially perhaps in relation to practical therapeutics, and it is the duty of the clinical teacher to indicate these possibilities to the student and arouse his interest in the field which lies before him. Sanderson, the great headmaster of Oundle, whose views upon the public school system of education have aroused such widespread interest, laid it down as one of his axioms that when a boy leaves school he should do so full of confidence in the realisation of his potential powers. This is an ideal which I think we clinicians should aim at and encourage in our teaching. The undergraduate must be given to understand that, as regards treatment, we require facts and that he has it in his power if he makes use of his opportunities to add something to the store of knowledge. Sir James Mackenzie has, perhaps, done more by his demonstrations of what may be accomplished by a general practitioner than by the most valued contributions with which he has enriched the literature of medicine. An isolated observation, if correctly observed, controlled, and recorded, may indeed be of real worth. I may here remind you of Sir Lauder Brunton's discovery, when still a house physician in the Edinburgh Royal Infirmary, of the value of nitrites in the treatment of angina pectoris. While examining a patient who was suffering from an attack of cardiac pain, Lauder Brunton noted that the blood pressure was unduly high; knowing that nitrites produce relaxation of the non-striped muscle, he gave the patient some nitrite of amyl during a subsequent attack, with the result that the pain was almost immediately relieved. All of us, no doubt, have occasional opportunities of arriving at important therapeutic conclusions, but too often we fail through want of knowledge or want of training to appreciate the significance of our observations. Some weeks ago I met a practitioner of wide knowledge and sound judgment. I asked him as to his personal experience of the value of a certain remedy. He told me that he had definitely made up his mind as to its value and that he had observed so many cases in which he was satisfied that a cure had thereby been effected. His statements were sufficient to convince me that his conclusions were almost certainly justified. I said to him, "If you were to report these cases with the evidence as you have narrated it to me you would, I believe, be making a valuable contribution to medical literature." His answer was, "Unfortunately, I have not kept a written record of the details, and, besides, my experience is no doubt a matter of common knowledge." This reply emphasises both the difficulty the busy practitioner has in taking records of his cases and our lack of knowledge of established facts. It is, no doubt, impossible and unnecessary for the practitioner to take notes of all cases; but if he realises the value of therapeutic conclusions and has been trained to recognise the possible fallacies the hope that he may thereby be enabled to contribute something to the advancement of knowledge will give him an added interest in his work.

AN "ILLUSTRATED" CLINICAL PHARMACOPŒIA.

What clinical proof exists, if any, as to the effect of this or that remedy? What are the proved facts? This is a question which we must of necessity repeatedly ask ourselves. A reputed remedy, as is well known, may be widely employed at one time and sooner or later fall into disuse to be replaced by another which in turn shares the same fate. Yet when we come to ask ourselves for an explanation we must admit that the answer to the question is generally to be found in the fashion of the moment. The opportunity of proving beyond doubt the value of a remedy occurs but seldom and the experience of each one of us is necessarily limited. Consequently, I feel that an "illustrated" clinical pharmacopœia, by which I mean a catalogued collection of remedies of proved value accompanied by clinical observations illustrating the existing evidence as to the efficacy of the remedies in question, would be of great value. A publication of this kind, which would no doubt require to be based on *de novo* observations and edited and compiled by competent authorities, would, it seems to me, be most helpful in presenting the existing state of knowledge. Again, it would serve to stimulate our interest and enthusiasm and encourage us by indicating what has been done and the fallacies which require to be met, to utilise our critical faculties. In addition, it would, I think, prove the best corrective of those two extremes, credulity and therapeutic nihilism, which prepare the ground for the pseudo-science and the "cure-all" propaganda of the present day.

CONCLUSIONS.

I have entitled this address a Plea for Accuracy in Therapeutic Deduction, and I hope that I have made my position clear, for to quote a recent writer, "Language is in truth the devil. It is always in danger of expressing too much or too little or something different from what you mean." The purpose of my thesis has been to emphasise "the fundamental difference between belief and knowledge, conjecture and certainty." I have reminded you that we clinicians constitute the tribunal, so to speak, which adjudicates the value of remedies, and that great though the difficulties often are this does not excuse us from shirking our responsibilities and doing all we can to add to the store of established facts. I have further indicated that there is here, I believe, a field open to the general practitioner who has been taught to realise the possibilities and at the same time trained to appreciate the fallacies with which he is confronted.

So far as I can see, it is only by a much more general recognition of the necessity for correct thought and precise statement than at present exists that pseudo-science and quackery can be successfully combated, a matter so essential in the public interests.

THE LATE DR. AUBURN WILKINSON.—Auburn Wilkinson, M.D. Durh., of Tynemouth, died on Jan. 25th in his seventy-eighth year. A native of Wark, North Tyne, he qualified as M.R.C.S. in 1873, and as L.S.A. in 1874, later graduating as M.B. in the University of Durham in 1885, he proceeded to M.D. in 1888. He was in practice in Tynemouth for 55 years, and only relinquished active duty at the onset of his last illness about two months ago. Amongst public appointments which he held were those of surgeon to the police and honorary surgeon of the Tynemouth Infirmary. He was an honorary associate of the Order of St. John of Jerusalem and an honorary life member of the St. John Ambulance Association. He was one of the founders of the Tynemouth Volunteer Life Brigade, of which he was the honorary surgeon at the time of his death. His wife predeceased him, and he is survived by a son and a daughter, a second son having been killed in the war.

Clinical Lectures
ON
APPENDICITIS: ITS CAUSATION, DIAGNOSIS, AND TREATMENT.

Delivered at the Bristol Royal Infirmary

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PART II.*

THE TREATMENT OF APPENDICITIS.

IT might be imagined that appendicitis and operation follow one another as daylight follows dawn, and there is no more to be said. Nevertheless, the subject has points of interest which we shall select for discussion. The following questions come up for consideration:—

(i.) What arguments may we fairly lay before an intelligent patient or relative to induce him to consent to operation?

(ii.) Is it ever wise to postpone operation in acute appendicitis?

(iii.) Why do certain cases die, and how may this be avoided?

(iv.) How is the case to be handled which does not make good progress after operation?

(v.) Operative technique.

Arguments for Operation.

What arguments may we fairly lay before the patient or relatives to induce him to consent to operation? There are two circumstances under which it may be difficult to obtain consent; when the patient is already very ill, or when many days have passed without improvement the difficulty usually passes. But during the first 24 hours of the illness, or in what Edmund Owen used to call the "fool's paradise" stage, all our arguments may be needed.

Taking the first of these contingencies and trying to look at it from the patient's point of view (and some few older doctors will still side with him), we must admit that the symptoms do not look very alarming as yet, and a majority of cases of acute appendicitis, left to themselves, will get well. What the percentage will be is difficult to say; perhaps about 80 per cent. will recover. Then why not wait a few days and find out which way this particular case is going, and if necessary operate to-morrow or the day after? Now, every up-to-date member of the profession knows that in the early case, seen on the first or second day, this course is liable to be disastrous, but all do not know just how to argue the point.

Let us start by pointing out that about 2500 persons die every year in England and Wales of appendicitis. If these had all been operated on on the first day the number would have been far less. The general mortality of acute appendicitis in all classes of practice is, according to my records, about 6 per cent.; none of my patients operated on within 24 hours died, and it is safe to say that the general mortality under those circumstances would be well below 0·5 per cent. That is to say, by waiting beyond 24 hours, 2000 lives are annually thrown away. In 1905, when the policy of waiting till the patient was really ill before operating was in force, the death-rate in 1000 cases collected by Lett at the London Hospital was 17 per cent.

Second, let us point out that waiting during the first 72 hours of the disease allows the risks to mount up alarmingly. In my series the death-rate following operation on various days works out as shown in the table (only cases with a rise of temperature are included). For the sake of confirmation a table given by Lett[1] from the figures of the London Hospital is also quoted. (Table VII.)

* Part I. appeared in THE LANCET last week.

TABLE VII.—*Mortality after Operation on Different Days of the Attack.*

Day of attack.	Present series.			Lett's series.		
	Cases.	Died.	Mortality per cent.	Cases.	Died.	Mortality per cent.
First ..	39	0	0	162	2	1·2
Second ..	85	4	4·7	152	6	3·0
Third ..	95	8	8·4	115	10	8·7
Fourth ..	51	5	9·8	50	2	4·0
Fifth or later.	77	5	6·5	183	10	5·4

Table VII. shows that, striking an average and speaking in round figures, of every hundred cases seen, to wait from the first day to the second will throw away three or four lives, and waiting from the first to the third will sacrifice eight lives per 100 cases seen. The third and fourth are the dangerous days.

The third argument concerns the length of convalescence. Operation before perforation avoids nearly all the complications of appendicitis, and obviates the need for drainage. The wound will be healed and the patient able to get up in 12 to 14 days. If removal of the appendix is delayed till suppuration has occurred, various complications may arise, and the wound is quite likely to discharge for many weeks.

The fourth argument, and one which seldom fails to clinch the matter, relates to the possibility of recurrence. It may be taken as roughly correct to say that if a person has one attack of appendicitis, there is a 50 per cent. probability of a further attack, the date and severity of which are totally unforeseeable. After two attacks the probability of a third attack is about 80 per cent. Evidently, therefore, the probabilities are very great that there will have to be an operation one day; if so, why not obtain the present benefit of it? It should always be borne in mind that a child with appendicitis is generally worse than the symptoms would indicate, relatively to an adult.

The second class of cases in which it may be difficult to obtain consent to remove the appendix is in the so-called "fool's paradise" stage. There may be an unaccountable and purely temporary drop in the temperature, or, more deceptive still, the pain may suddenly cease for a while and the tenderness lessen on account of the bursting of the tensely distended appendix. How often we are told by a triumphant mother: "The little boy's temperature was 101° when you took it this morning, doctor, and now it is only 100°, so he must be better, mustn't he?" For instance, I well remember driving 25 miles to see a farmer in a very lonely part of Somerset; on arrival, there was temporary relief from perforation of the appendix, and in spite of all persuasion the old man refused to have anything done. When the car was just disappearing from sight he relented and sent after us, but we were gone beyond reach. Next day, by this time thoroughly ill, he had us fetched down again and the appendix was removed and the widespread peritonitis drained. He put up a good fight, but succumbed after ten days. It was a life thrown away.

A genuine improvement, justifying delay, may be distinguished from the "fool's paradise" stage, in that there is *improvement in all respects*. The pain, and the tenderness, and the pulse-rate, and the temperature, and the vomiting, are each and all definitely better. To trust to one or two of these signs by themselves is to court disaster.

When is it Wise to Wait?

Is it ever wise to postpone operation in acute appendicitis? The majority of surgeons in this country would probably answer in the negative, but we shall allow certain classes of cases. For this purpose some classification is necessary. We shall employ the classification given in Table VIII., which is in general use.

TABLE VIII.—*Classification of Cases, with Mortality.*

Group.		No. of cases.
A.	Non-perforated cases, with rise of temperature. Usually operated on on the first or second day	132 (2 died = 1·4 %).
B.	Non-perforated afebrile cases (appendicular colic)	40 (0 died).
C.	Perforated cases, local peritonitis, not walled off	129 (8 died = 6·5 %).
D.	Walled-off abscess, usually after fifth day	52 (2 died = 4 %).
E.	Widespread (so-called "general") peritonitis	38 (13 died = 33 %).

Now, for the reasons already given, there is, in ordinary, no doubt at all that cases in group A should have the appendix removed as quickly as possible, because only in this way can we be sure of averting the perils of perforation. And perforation may occur very early. There is at present under my care a young man whose appendix perforated within three hours of the first rise of temperature. Given intervention before perforation occurs, very few patients will die. In the above series one of the two deaths in this group was from subdiaphragmatic abscess, and the appendix had probably leaked although this was not recognised at operation; the other died from pneumonia seven weeks after recovery from the operation, and it is only to avoid the charge of "cooking" statistics that it is included. The rule may be laid down then that symptoms of appendicitis with a rise of temperature above 99° and of pulse above 90 demand immediate operation.

In the second group, labelled B, there is pain, perhaps some vomiting, tenderness, and a little guarding over the right iliac fossa, but no rise of pulse or temperature. The diagnosis may not be altogether certain. Here, whilst it is no doubt quite justifiable to operate, it is our practice to wait. It is exceedingly improbable that the patient will come to any harm so long as a careful watch is kept on the pulse and temperature, and the appendix removed if they show a rise. If, however, the pain and tenderness have not completely disappeared after a week, or if there is a second attack, we advise operation.

In group C the appendix has already perforated and the general rule has been that it ought to be removed at once. But here some questions arise for discussion. It may be very difficult to decide if the appendix *has* perforated. Of course, if there is a palpable lump, or if the widespread tenderness and rigidity indicate peritonitis, the conclusion is readily reached. The time factor helps; if the symptoms are well marked after the lapse of 48 hours, perforation has probably occurred. On the other hand, it is uncommon for matters to have progressed so far under 24 hours, though exceptions to this generalisation are often seen. So long as skin tenderness above Poupart's ligament can be elicited, the probabilities are that perforation has not yet taken place. In cases of doubt, immediate operation is the wise treatment.

When it is fairly clear that local peritonitis is already present, and the patient is in a toxic condition, there is room for difference of opinion as to the best course to follow. In the present series the procedure has been to open the abdomen and remove the appendix at once, and this is the advice that would be given by the great majority of British surgeons. But there is a good deal to be said for the line of treatment, common in America and generally followed of late years at the London Hospital, of seeking to postpone appendicectomy from the third and fourth days to a later stage. The patient is put in the Fowler position, given morphia and fomentations for pain, and nothing by mouth except water, so as to inhibit peristalsis as far as possible. The argument is that the death-rate is high when the operation is performed on the third or fourth day, but falls afterwards; by the end of ten days it is very low. If time can be afforded for the purpose, antibodies accumulate in the blood, the pus becomes shut off by adhesions, and the acute toxæmia passes off to some extent. On the other hand, we have argued that the cases in which this happy course is followed would have been the ones which would have done well after a third or fourth day appendicectomy, and that the patients who are in real danger of a fatal issue will not settle down if the surgeon holds his hand at that period but go from bad to worse, and that a few of them may be saved by third or fourth day operating who would be lost by further postponement. The good figures obtained when the appendix is removed, or an abscess drained after a week, are due mainly to the inclusion of a common type of case in which the symptoms are mild from the first, and no doctor is sent for until there is an obvious abscess; these all do well.

However, the very recent statistics from the London Hospital are so favourable that we must be prepared to allow the possibility of the wisdom of delay in toxic cases. It is not easy to compare figures from two widely separated districts, as the death-rate from appendicitis depends much more on the readiness with which patients seek medical advice, and on the prompt action of the general practitioner, than on the skill of the surgeon.

When the attack is manifestly subsiding, everyone will agree that it is better to wait. We ought not, however, to use to ourselves the phrase "manifestly subsiding," unless there is a definite improvement in *all the signs*—pain, tenderness, temperature, pulse-rate, vomiting, &c. Otherwise we may be deceived by a "fool's paradise" stage. After the attack is over, by all means remove the appendix, but the interval makes the operation safer and freer from delays in healing. It takes about a fortnight for the peritoneum to regain sterility, and we should wait at least a week, and preferably a fortnight, but patients are apt to get impatient.

Group D may be quickly dismissed. Here, as in the classical case of King Edward VII., operation has been delayed for five days or longer, and there is a well-walled-off abscess, which can be felt and often seen as a definite rounded lump. The happy course taken by the disease may be due to a mild infection, or to a retrocæcal position of the appendix, or to the fortunate accident that it had omentum wrapped around it. Operation is necessary, or the abscess will spread, and may rupture into the bladder or in some other disastrous direction, but there is no absolute urgency to an hour or two. Question may arise as to whether it is wise in these cases to remove the appendix or merely to drain. The former operation may be very difficult. An experienced surgeon will very, very seldom leave the appendix; the occasional operator, if he is wise, will do so frequently. If the appendix is left, about 17 per cent. of the patients will have further trouble (Lett's 1905 statistics). This figure does not seem high enough to make a second operation necessary in ordinary circumstances until there is a further attack.

In group E, with evidence of widespread, so-called "general" peritonitis, we have thought that operation is urgently indicated, though there is bound to be a heavy mortality. Probably we have often tried to do too much. Even if the patient is desperately ill, it is worth while to drain the pelvis under a local anæsthetic, and I have saved cases by this, the only possible procedure. Possibly the new operation of draining the thoracic duct may help to reduce the risks in these very grave cases. At the London Hospital they advise waiting a few days in hopes of localisation in the pelvis.

Why do Certain Cases Die, and How May this be Prevented?

In the series here presented as the basis for our study there were five deaths in private practice and 20 in hospital practice. Of the five in private practice, four were operated on far away in the country at small hospitals or at a country house, and only one at a Bristol nursing-home, yet, of course, the great bulk of private operating is done at a nursing-home. Better ambulance transport to remove country cases before they get very ill is urgently needed. The four who died were all very ill. One developed measles

a day or two after the appendicectomy, a second refused operation at my first visit and sent again next day. Another collapsed unexpectedly during a spell of torrid heat in July. The one nursing-home case who died was a man of 74 who travelled for many hours by train after he had perforated. Of the hospital cases, four died within 48 hours of admission. In another case only a suprapubic drain under gas was possible. Three died of pneumonia, one, three, and seven weeks after operation. Subphrenic abscess accounted for another, and multiple residual pelvic abscess for two more. There was one death from a very unusual cause —secondary hæmorrhage from the deep epigastric artery a month after operation. All the rest were carried off by peritonitis or ileus.

TABLE IX.—*Causes of Death after Operation for Appendicitis.*

	Cases.
Died under 24 hours	3
Measles and peritonitis	1
Pneumonia	3
Heat collapse	1
Secondary hæmorrhage	1
Subphrenic abscess	1
Multiple residual abscesses	2
Peritonitis or ileus	13

Now, of the causes of death shown in Table IX., some are preventable and some cannot be controlled. Early operation before the appendix perforates eliminates nearly all. The practice of giving an aperient to a patient who may possibly have appendicitis loses many lives. The more carefully the operator swabs out the pelvis and other soiled areas the fewer cases of residual or subdiaphragmatic abscesses and of ileus will he have to lament. The technique of drainage will be referred to later. It may be that in the future we may be able to save more lives in neglected cases by opening the jejunum under novocaine in cases of ileus, and by lymphaticostomy for peritonitis.

Management of the Case which does not make Good Progress after Operation.

I shall not say more about the treatment of peritonitis or of ileus which follows well-known lines, except to mention the fact that physostigmine salicylate and pituitary given coincidently are much more effectual than either given alone in the treatment of ileus. In really grave cases several days after operation, when all other measures have failed to get the bowels to act and the prospects look gloomy, I have had great success on many occasions with a rather drastic "triple attack." The method is to give two drops of croton oil, then four hours later a turpentine or alum enema, and whilst it is still in the bowel, an injection of pituitary. It very seldom fails, and is, I believe, life-saving.

When the temperature remains persistently high after removal of the appendix we may allow a week, unless, of course, there are signs of serious trouble, before becoming alarmed about it. At the end of a week, a routine search must be made for the cause. It will nearly always be one of the following :—

1. *Suppuration of the Abdominal Wall.*—The diagnosis and treatment are obvious.

2. *Pericæcal Abscess.*—This is due to inadequate drainage at the operation or premature removal of a drain, and ought not to occur. Diagnosis and treatment are obvious.

3. *Pelvic Abscess.*—Due to inadequate cleansing or lack of drainage. The abdomen will present no signs except some distension, but there may be a mucous discharge from the rectum. The condition is recognised by a rectal or vaginal examination. As soon as it is large enough to be fairly easy to find, open it.

4. *Subphrenic Abscess.*—Generally in these cases nothing is to be felt in the abdomen, but the liver dullness is raised two intercostal spaces at the base of the right lung, with absent breath-sounds. Confirm by a skiagram, which shows doming up of the diaphragm on that side. I prefer to open these abscesses by an incision in the mid-axillary line, resecting an inch or two of the two lowest ribs met with, and entering the abdomen below the pleural reflection, between the liver and the diaphragm. This gives beautiful access, avoids all trouble with the pleural cavity, and allows dependent drainage.

5. *Other Residual Intra-abdominal Abscesses.*—These may occur anywhere, but except in the situations just mentioned are easily felt as tumid swellings ; just above the pubes is a common place.

6. *Pneumonia, Empyema, Bronchitis.*—These need no discussion. If confusion arises between subphrenic abscess and empyema, the skiagram will decide ; in the former case the upper level of shadow is domed upwards, in the latter case it is horizontal.

7. *Suppurative Pylephlebitis (Portal Pyæmia).*—In this very grave condition there will usually be rigors, and perhaps a little jaundice. The liver may be tender and swollen. Most of these patients die, but I saved one by opening and draining the abscess, which was fortunately solitary and superficial on the upper surface of the liver.

8. *B. coli Pyelitis.*—Once or twice I have seen a persistent temperature after appendicectomy due to this cause. The diagnosis is given by the exclusion of other causes, the presence of *B. coli* in the urine, and the rapid recovery after the administration of hexamine.

Operative Technique.

I shall deal with this very briefly.

(1) Use the Battle incision, not the McBurney. The idea that there are more incisional hernias after the former than when the muscle-splitting operation is performed is incorrect. If a drainage-tube is used *through the incision* any operation may be followed by a hernia ; if the drainage is kept separate, I have only once seen an incisional hernia after the Battle operation. Its great advantage is the much better access without cutting across the oblique muscles. It is difficult to deal adequately with an infected pelvis through the McBurney incision unless its alleged advantage is sacrificed by cutting across muscle fibres. If there is a palpable swelling, make the incision partly off the swelling and partly over it. Try not to divide more than one intercostal nerve, or there will be some weakness of the rectus. Do not allow a nerve to be caught in a ligature. Even motor nerves contain sensory fibres.

(2) However difficult it may be to do so, the stump of the appendix must be securely buried or otherwise shut off from the peritoneal cavity. It is useless to trust to drainage to make good any deficiencies in this direction. The removal and secure closure of the appendix may be a very easy operation or it may be of exceeding difficulty.

(3) Thoroughly cleanse the pelvis and the perirenal pouch also if they are soiled.

(4) *Drainage.* If it is decided to drain (and if the appendix has perforated, in spite of the modern tendency to the contrary, it is probably safer to do so), close the incision and use stab-drains. Of late years I have given up drainage-tubes to a considerable extent in favour of corrugated rubber dam, which does not cause tissue-necrosis or exert any pressure. In a case with local and pelvic peritonitis the drainage-scheme is: (*a*) A long narrow strip of rubber dam, through a median stab just above the pubes, down to the bottom of the recto-vesical pouch ; (*b*) a rubber tube, through a stab in the loin, just entering the peritoneal cavity close to the site of the appendicectomy ; (*c*) a narrow strip of rubber dam at the lower end of the operation wound, entering the rectus sheath but not entering the peritoneal cavity, to control suppuration of the abdominal wall.

I have never known an incisional hernia follow this method of drainage. If it had been followed at that time, I do not think the death from secondary hæmorrhage from the deep epigastric artery would have occurred.

References.—Lett: Rendle Short's "Index of Prognosis," third edition, article "Appendicitis"; McNeill Love: Brit. Jour. Surgery, April, 1923, October, 1924.

THE ACIDIC VALUE OF THE URINE IN SKIN AND OTHER MANIFESTATIONS.

A STUDY OF ABNORMAL HYDROGEN-ION CONCENTRATION AS AN INDICATION OF DISEASE.

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URINE with a high acidic value is a very much commoner condition than is generally supposed. Many people have it in a definitely pathological degree who are apparently in perfectly good health. It would appear that this state is an indication of some underlying disease, the nature of which we know nothing. This obscure condition is a grave menace to our well-being, and sooner or later, on the advent of some additional or superimposed strain, some organ or tissue of the body will refuse to function properly. It prevents or hinders the clearing up and healing of lesions and there seems to be no doubt that it can, by itself, poison various tissues of the body. I make the suggestion that it is usually congenital but may be acquired. Treatment with alkalis will relieve the patient and allow the lesions to heal up, but the high concentration of the hydrogen ions in the urine will return and the patient will have a relapse when another strain is put upon the organs or tissues. Thus it would seem that this high acidic value, apart from treatment, is permanent. The only exceptions that I have found so far to this rule are in cases of gastro-intestinal toxæmia. In this type of case there is usually an erythematous or papular rash and the pH value of the urine varies from 5 to 5·6. When the rash fades away, the pH value of the urine returns to normal, even without treatment, showing that the phase is only a temporary one.

Although I have been working on this state for the last 21 months, chiefly from the dermatological point of view, I have been struck by the number of patients in the medical wards who have shown a great intensity of the acid in their urine, and by the change for the better that takes place the moment they are treated with large doses of alkalis.

The pH Value of the Urine.

The only method employed throughout my investigations was to find out the pH value of the urine, as I found there was no increase in the actual amount of acid present in the urine of the patients I was testing. In other words, there was no true acidosis. If the pH value was pathological, I endeavoured to bring it to the normal limit and keep it there. This normal limit I have found by examining very large numbers of healthy men to be from 6·4 to 6·8. I was careful to exclude all those with skin diseases, especially seborrhœics. Even then I found a small percentage with a high pH value. It is analogous to those people who without any signs or history of syphilis are found to have a strongly positive Wassermann reaction. Also, as with them, the question arises, should they be treated? Until more is known as regards the causes of the state that question cannot be answered.

The cardinal fact underlying my clinical investigations is that the mean hydrogen-ion concentration of the urine in certain skin and other diseases is of a high order, but that no abnormal increase in titratable acids can be found associated therewith.

The possible causes of this might be: (1) The excretion of an abnormal acid of high dissociation constant. (2) The deficient excretion of one or more of the normal urinary buffers so that the normal urinary acids cause a marked increase in the hydrogen-ion concentration. (3) The abnormal excretion of some element which causes increased dissociation or hydrolysis of one or other of the urinary constituents which are combinations of a weak base and strong acid and vice versa, or to some other cause.

The fact that quite moderate doses of alkalis are sufficient to change the pH value to normal limits instead of the massive doses required in true acidosis cases to cause the same pH change seems to indicate that there is no real acidosis underlying the condition, but that some equilibrium change or changes cause the normal urinary acids to give a high intensity value.

The pH value of the blood is of no help, but the clue to the urinary changes may possibly be found in the blood chemistry of these cases. In the quantitative blood examinations of the acid and alkali buffers, the alkali reserve, the pH values obtained from determinations of the free and fixed CO_2 ratio, and direct electrometric measurements might be of value in determining the operative factors. The changes in the sweat and saliva promise to be of interest.

Examination of the Urine.

By taking morning and evening specimens I found that the pH value varied within certain limits according to the amount and kind of food taken, and also with the interval of time since the last meal. It is better to start with a specimen taken the first thing in morning and the last thing at night, and later to examine 12-hour samples. Occasionally I find it useful to also test a specimen taken two hours after a big meal. The urine should be examined daily until the patient is well under treatment, when once or twice a week will suffice.

The Urine in Patients with Skin Manifestations.—In some 500 cases of patients suffering from skin diseases I found that all those with seborrhœa, seborrhœic eczema, acne, and cheiropompholyx, without a single exception, had a urine with a pH value of from 4·8 to 5·8, unless alkalis had been given. Infantile eczema is not a seborrhœic condition, the urine in these cases gives a normal pH value, and the patients do not improve on alkalis.

Dr. H. W. Barber, in an article written in conjunction with Dr. H. C. Semon entitled Some New Observations on the Ætiology and Treatment of Seborrhœic Eruptions,[1] was the first to point out that the seborrhœic state is really a manifestation of acidosis, and that in the great majority of cases the activity of the inflammatory processes ceases as soon as the urine is rendered virtually alkaline. The article goes on to say that although the chemical examination of the urine has never revealed the presence of di-acetic or β-oxybutyric acids, nor is it suggested that the degree of acidosis present in all resembles that commonly met with in diabetes, it is not to be denied that there are certain resemblances in the clinical features of the two diseases.

In the light of my recent work I am in absolute agreement with these views except that I consider that the word acidosis is not the correct word to use for this condition, and suggest that "acidic value" is more in accordance with chemical findings.

Dr. Richard L. Sutton, in his book, "Diseases of the Skin,"[2] writes as follows:—

> "Barber and Semon believe that all patients with status seborrhœicus suffer from relative acidosis, and recommend the adoption of appropriate treatment, but Sweitzer and Michelson,[3] in an exhaustive and careful series of studies, were unable to establish any etiologic relationship between the two conditions. Inquiry among pediatricians disclosed the fact that in a large number of cases of acidosis observed, due to a variety of causes, no cases of infantile eczema or of seborrhœic dermatitis were encountered."

These investigators must have fixed their attention on the amount of titratable acids and ignored the hydrogen-ion concentration altogether, otherwise they could not have failed to have been struck with the extraordinary high acidic value of the urine of all the seborrhœics they examined.

The Action of Alkalis on Patients with Skin Manifestations.

Seborrhœic Eczema.—The action of alkalis on patients with this condition is very marked, even on those cases who have had eruptions for years. The weeping stops, the angry look dies away, the redness becomes paler and paler, the irritation ceases, a thin bluish-coloured skin covers up the lesion, and then normal skin appears and the lesion is healed. This can occur without any local treatment of any kind having been applied. The length of time taken to effect a cure depends on how long it takes to bring the urine to a normal pH value, and this naturally varies with each case. If too much alkali is given and the pH value of the urine reaches from 7·2 to 8, the lesions tend to reappear, and unless the dose is cut down or stopped the patient's condition may become worse. This rather rare result of over-treatment is well illustrated in the following case:—

CASE 1.—J. P., a man, aged 36, who had had no previous skin trouble. He was badly wounded in 1916 and was given an injection of anti-tetanic serum and sent to hospital in England. Here he was given a second injection which, he states, caused him to break out in a rash all over his body which remained long after his wound had healed; in fact, he was in hospital for 18 months. In time his skin became normal except for a weeping dermatitis covering both his hands. He had received treatment from several eminent dermatologists without the lesions clearing up. He was forced to wear gloves continually, and consequently was too shy to dine away from home. He was very anxious, on his first visit to me, to attend a big dinner in Paris 48 hours later. I gave him half a pound of bicarbonate of soda with instructions to take a teaspoonful three or four times a day. His hands were perfectly healed by the time he arrived in Paris. Against my advice he continued taking large doses of this salt and in a few days, after consuming some pounds, he developed a weeping dermatitis covering practically the whole of his body. The pH value of his urine was then 8. On stopping the medicine the rash cleared up, taking ten days to do so.

The next case shows the action of alkalis both on the skin condition and on the kidneys.

CASE 2.—J. J. R., a man, aged 49, had had seborrhœic eczema for ten years, chiefly limited to the face and neck. The skin was red, swollen, and weeping. He stated that it started as a small itching spot on his nose which he scratched. He must have infected this with his nails, for the spot rapidly spread, and in a few weeks his whole face and neck was a mass of weeping and irritating eczema. Every form of local treatment was tried for years, but with only slight relief. He spent several hours a day either bathing his face with lotion or smearing ointment on it. He was unable to go into a heated room or to drive in an open car. At times it was impossible for him to shave, and he never was able to lather or wash his face with soap.

When first seen in April, 1923, the report on his urine was as follows: Sp. gr. 1010, very acid to litmus, H-ion concentration, pH 5·8, trace of albumin present, but no nucleoprotein, acetone, aceto-acetic acid, phosphates (earthy), urates, bile salts, or sugar. Quantitative albumin (Esbach) was under 0·01 per cent. Centrifugalised deposit: Microscopical examination showed a few granular casts, a few tubular renal epithelial cells, and a few leucocytes, but no red blood corpuscles or crystals, &c.

Under drachm doses of sod. bicarb. his condition rapidly improved, and I was able to reduce the amount by half in a few weeks. He carried on the same local treatment that he had done for years. Not only did the eczema clear up, but his kidney condition, as shown by the examination of his urine, became normal. I noticed that if his urine stayed between 6·4 and 6·8 his face remained in a perfectly normal condition. If it went to 5·9, his skin started to inflame, and casts, renal cells, and leucocytes reappeared in his urine. If it went to the alkaline side of 7 his face condition remained good, but the casts, &c., reappeared. Thus the pathological report on his urine on Nov. 8th was as follows: Sp. gr. 1014, very alkaline to litmus, H-ion concentration, pH 7·6, albumin present and a trace of nucleoprotein.

The amount of albumin present was more than that found in all recent specimens, but was too small in amount for quantitative estimation. There was a trace of indican, but chemical tests showed the absence of blood and pus. There was no acetone, aceto-acetic acid, bile salts, or sugar, and no urates, but earthy phosphates were abundant. Centrifugalised deposit: Microscopical examination showed granular hyaline casts and a few renal cells, leucocytes, but no erythrocytes. Triple and stellar phosphates were present. The increased albumin, casts, &c., may possibly be due to the abnormally great alkalinity of the urine.

From December, 1923, to the present time he has a slight relapse of his skin condition when his urine is very acid, but his renal state remained very good, even when his urine reached 5·6 or 7·6. So it appears that the treatment has allowed his kidneys the chance of recovering. Thus on May 30th, 1924, the report on his urine was as follows: Sp. gr. 1016, alkaline to litmus, H-ion concentration, pH 7·6. There was no albumin, nucleoprotein, blood (chemical), indican, acetone, aceto-acetic acid, urates, bile salts, or sugar, but earthy phosphates were very abundant. Centrifugalised deposit: Microscopical examination: No casts, renal cells, leucocytes, or other organised cells were present, but a few stellar phosphates, triple phosphate crystals, and a very large amount of amorphous phosphates. He is still taking bicarbonate of soda in half-drachm doses two or three times a day. He is leading a perfectly normal life, and except for meat he eats anything he likes.

CASE 3.—L. S., a nursing sister, had an outbreak of seborrhœic eczema in Malta three years previously. When I first saw her 15 months ago she had a very acute, weeping, and irritating dermatitis, involving chiefly her arms and legs. It took a pound and a half of cotton-wool a day to absorb the fluid from the lesions. I ordered her to bed and put her on medium doses of bicarbonate of soda and potassium citrate. I gave her no local treatment whatever. She begged to be allowed to apply one of the many lotions she had been in the habit of using and complained bitterly when this was refused. In two days the lesions were healing and had quite cleared up at the end of ten days. Since then I hear that she had a slight relapse when she had an attack of influenza some months later, but on continuing the medicine, which she called "the magic draught," it completely healed up.

The cases described above illustrate very well the action of alkalis on seborrhœic eczema; they are only three out of over one hundred examples I could quote. Rarely one meets cases that do not clear up easily under alkalis, even with the help of local treatment. These cases are due to a skin sensitisation to a staphylococcus, fresh lesions breaking every now and then at a distance from the original focus. This staphylococcus is usually *S. aureus*, sometimes *S. albus* or even *S. citreus*. These cases require to be desensitised by injections of autogenous vaccines, peptone injections, low carbohydrate dietary and other means. These have been described by Dr. Barber. Cheiropompholyx I place in the same category as the above, the action of alkalis is just as remarkable, and no local treatment is usually required.

Seborrhœa.—The action of alkalis on seborrhœa, wherever it is situated and whatever the type may be, is a very great aid to, but can never replace, local treatment.

Acne.—Here, again, local treatment must be energetically carried out. One case will serve to describe the change that takes place when alkalis are administered.

J. M., a girl, aged 17, had been treated for acne since she was 11. For the past three and a quarter years she had been under the direct care of a distinguished dermatologist. Every form of modern treatment had been tried in her case, including the administration of an autogenous vaccine and radiotherapy. When first seen by me her face and back were covered with typical acne. The pH value of the morning urine was 5, and the evening specimen 5·1. Three days after the administration of alkalis, when the pH value had been raised to 5·3, she started to improve. At the end of a week the change was very marked. What especially impressed her mother at this time was that the scalp and skin were no longer greasy and no fresh "spots" had appeared. At the end of a fortnight she was well on the way to recovery. I noticed that the deep-seated pustules had worked their way to the surface. In four weeks she was clear of active signs, and all that remained were a few healing scars and some small comedones.

Other Skin Conditions.—Amongst other skin conditions that have an abnormally high pH value and that greatly improve or are cured by administering alkalis are prickly heat, carbuncles, abscesses, boils, and a generalised prurigo. This latter condition is often seen in cases that have, to all intents and

purposes, a normal-looking skin. I find in these cases that before the itching is relieved the pH value of the urine has to be pushed up to 7·5 or 8.

The Urine and the Action of Alkalis in Other Diseases.

It is with diffidence that I write on the high pH value of the urine in other diseases than those of the skin, and it is really to suggest the lines that research workers might follow that I state my limited experiences. In gout and rheumatism the pH value is high and alkalis give marked relief. Neurologists might test out the acidic value in their cases. Epilepsy, neurasthenia, and hysteria are examples of diseases in which I have found a high percentage of abnormal acidic urines. It would be of great interest if independent observers would record their researches in the large group of psychic and other ailments of the central nervous system, many of them involving a derangement of the autonomic system, vago- and sympathicotonic, and which in many cases exhibit cutaneous manifestations. It would seem worth while if the pH value of the urine of all patients admitted to hospital was ascertained, as alkalis are of such remarkable value in diseases as far apart as blackwater fever and broncho-pneumonia. It may account for the benefit some people derive from taking proprietary salts, and attendance at alkaline spas.

I have recently examined the urine in the cases that have shown a marked reaction to vaccination, injections of T.A.B. vaccine and serums. They all show a pH value of from 5 to 5·6, even when they were well again. If alkalis are given to cases that have a high hydrogen-ion concentration to their urine, I find that when their urine is approaching the normal limit the patient generally volunteers the statement that any symptom of stiffness after exercise, headache or heavy feeling, previously complained of, has gone, and that he wakes up fresh in the morning, and getting up is no longer any trouble to him. Chronic dyspepsia is greatly relieved or has absolutely disappeared, also, in some instances, certain articles of diet which before caused inconvenience or even rashes or other toxic symptoms, can now be eaten with no bad after-effects. Strawberries and bananas are two instances.

Treatment with Alkalis.

In each case it is necessary to experiment before the exact dose can be gauged. Dr. Barber and Dr. Semon, in the article quoted above,[1] state how difficult it often is to bring the urine to the normal limit. Here my experience in the treatment of gonorrhœa was useful, especially that gained when I was experimenting with acriflavine, which has to be given with the patient's urine alkaline. The mixture which I now always start with, and which I call mist. acidosis (for want of a better name), is a modification of Dr. Langdon Brown's mixture for the treatment of the acidosis in diabetes. It consists of :—

℞	Sod. bicarb.	gr. 30
	Pot. bicarb.	gr. 25
	Pot. cit.	gr. 20
	Tinct. card. co.	min. 30
	Aquam menth. pip.	ad oz. 1

This is given three times a day, between meals, increasing or decreasing the dose according to the pH value of the urine.

My best thanks are due to Dr. Barber for his advice and help, to Dr. Lyn Dimond for his interest in my work and for his skill in carrying out the pathological side of the investigations, and also to Major R. E. Todd, M.B., R.A.M.C., for many useful suggestions and his help and encouragement.

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THE PREVENTION OF A HIGH MATERNAL MORTALITY FROM PUERPERAL SEPSIS.

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MUCH attention has been directed recently to the fact that maternal mortality in childbirth remains almost unaffected by the general fall in the death-rate, and that the most important single factor in maintaining this high mortality is puerperal sepsis. In spite of the attention directed to the subject and its importance, a certain vagueness and lack of focus appear to prevail in the attitude adopted to the condition. There still seems to be considerable disagreement as to its nature, its evidence, and as to the methods of prevention.

The history of our knowledge of the condition has been retailed so frequently of late that no further recapitulation is required. It is unnecessary to go further than Dame Janet Campbell's recent report on Maternal Mortality, in which a brief and admirable historical summary is given. It is rather surprising, however, to find a little further in the report the statement "we have not as yet exact knowledge as to the causation of the infection." As long ago as 1910 Dr. A. W. W. Lea, in his valuable book "Puerperal Infection," set forth what is the accepted modern view, which simply considers puerperal sepsis as a wound infection, and therefore due to any organism capable of producing a septic infection. The variation in the organisms found is therefore what one would expect. Unfortunately, there still appears to be a widespread idea that puerperal sepsis must be a specific infection. This belief is, I believe, a mischievous one, since it affects the attitude of the attendants on the patient, and leads to mistakes in both preventive and curative methods. Considering the condition then as a wound infection, the points of interest are how far infection depends on the varying factors involved: on environment, on injury, on hæmatogenous infection, on insufficient drainage, and finally, how much it is influenced by the resistance of the patient. These are important points and have been much debated; it is possible, however, that there may be some interest in considering them afresh in the light of a special and close investigation carried out in every case of puerperal sepsis notified in Birmingham during a period of 12 months. The whole interest of the inquiry centred on the question of prevention, methods of treatment were noted, but their relative value was not contrasted.

It is first necessary to consider the position in Birmingham as regards the midwifery service. There are 196 certified midwives in practice, whose work is closely supervised by the public health authorities. These women undertake a large proportion of the midwifery. During 1922 they attended 13,128 women in childbirth, representing 66 per cent. of the total births in the city. The larger proportion of the remaining cases were attended by medical practitioners assisted by the midwives or handywomen. Unfortunately, a very large proportion of women are still permitted by the medical practitioners to engage these handywomen to assist actively at the confinement and in the nursing during the puerperium. In addition the maternity hospital dealt with 787 cases; these were either primiparæ or cases where some abnormality was present or suspected, while a rather larger number were confined in the Poor-law hospitals, there being no restriction as to admission. There are several small maternity homes, including a municipal maternity home. Puerperal sepsis cases are treated at the Women's Hospital in a special ward. Cases are also treated in the Poor-law Hospitals. The patients in all three institutions are under the care of skilled obstetricians, and no case is refused admission. In consequence of this excellent provision for treatment

the number of puerperal sepsis cases notified in Birmingham per 1000 of the population is higher than in other cities—e.g., Leeds and Liverpool—where the only provision is a ward in the infectious disease hospital; while in Nottingham, where no special provision appears to have been made, the case incidence was at a minimum. The mortality per 1000 births from puerperal sepsis is a more reliable figure than the case-incidence, and in this Birmingham is below all the larger cities except Bristol. (Table I.)

TABLE I.

—	Case-incidence. Per 1000 of population.	Mortality. Per 1000 births.
England and Wales ..	0·06	1·38
London	0·08	1·42
Birmingham	0·11	1·21
Manchester	0·23	1·94
Liverpool	0·07	1·83
Leeds	0·07	1·28
Sheffield	0·12	1·68
Bristol	0·08	0·60
Nottingham	0·03	1·30

The number of cases notified during the period of 12 months (October, 1921, to October, 1922) amounted to 129. Of these 129, 35 were abortions, and the remaining 94 pregnancies in which the period was over seven months. Of these 94, five were not cases of puerperal sepsis. These five were of some interest from the point of view of diagnosis and are given below: 1. Pyelitis (chronic). 2. Scarlet fever (previous case in house). 3. Mammary abscess (pyrexia on the fifteenth day). 4. Acute bronchitis. 5. Chronic nervous disease (probably disseminated sclerosis, though a final diagnosis was not made. It was taken for a cerebral embolus, with puerperal sepsis, owing to the incomplete history).

Incidence.

In 1922, 19,850 births were notified in Birmingham, and the number of cases of notified puerperal sepsis was 137; this gives a percentage of 0·69, which is, of course, a very low incidence, but may be taken as an average. Consideration of this figure raises the question, "What is the true incidence of puerperal sepsis?"

Obviously the notified cases give no real indication of the condition, since only the severe cases requiring hospital treatment, or those who cannot well be treated at home for other reasons, are notified. Some indication can be obtained from the number of midwives' cases in which medical help was called for pyrexia. This is not, of course, an absolute guide, but the figures are very suggestive as shown by subsequent inquiry. It should be noted that only a small proportion of these cases are included among the notified cases of puerperal sepsis. The midwives sent for medical help for rise of temperature alone in 111 cases during 1922.

In 30 of the midwives' cases investigated in this inquiry medical help was called for during the puerperium; this may be taken as an average figure, for though the period does not absolutely coincide it is near enough for the purpose. It may then be taken that roughly two-thirds of the cases in which midwives summon medical help during the puerperium for rise of temperature are not notified as cases of puerperal sepsis. The majority of these cases are undoubtedly cases of mild sepsis. In addition it is probable that many rises of temperature are overlooked by the midwives, owing to their habit of visiting once a day only, and that in the morning. Taking everything into consideration, it would probably be fairly correct to state that at least three times as many cases of puerperal sepsis actually occur as are notified. The majority of these are undoubtedly mild cases, but a proportion are certified as dying of pneumonia or some other secondary complication. In addition many cases of phlegmasia alba dolens are known to occur, and are never notified, although these are, of course, cases of puerperal sepsis. Many practitioners who write of having delivered so many hundreds of women without a single case of puerperal sepsis have been extraordinarily lucky, or have failed to consider any case septic unless the condition was a severe general septicæmia or pyæmia. The whole question is one of definition. A clear and authoritative pronouncement is needed, and has not yet been made.

Environment: (a) Attendance at Labour.

TABLE II.

Doctor and handywomen	14	Doctors' cases .. 38
Doctor and midwife	10	
Doctor and midwife (hospital)	11	
Doctor and relative	3	
Midwife alone	30	Midwives' cases .. 51
Midwife and doctor (called during labour)	12	
Midwife (institution)	5	
Medical students and midwife	4	

From the figures in Table II. it will be seen that omitting the institutional cases and those attended by medical students, doctors were primarily in attendance in 27 cases, or 30 per cent., and midwives in 42 cases, or 48 per cent. This must be taken with the fact that the midwives normally attend 65 per cent. of all confinements, so that the percentage of puerperal sepsis in midwives' cases is not unduly high.

Nature of Labour.

Normal (no interference beyond vaginal examination)	52
Instrumental	29
Version, manual removal of placenta, &c.	8
Total	89

These figures show that the presence of the doctor does not under present conditions in any way safeguard the patient. Dame Janet Campbell has drawn a picture of the methods employed by the medical practitioner which is absolutely accurate for working-class practice as a whole, and which has been confirmed in this inquiry. The use of gloves and sterilised gowns is quite exceptional, while the preparation of the bed and of the dressings, &c., is primitive, when considered in the light of modern surgical procedure. As a rule, too, all swabbing and cleansing of the patient is left to the nurse, who is frequently an untrained handywoman. The methods of the midwife leave much to be desired, but a higher standard could be obtained from her if a better example were set. The attendance during the puerperium is equally important with the attendance at labour, and here again both doctor and midwife are inclined to do too little. The doctor in a large proportion of cases leaves all the nursing to the handywomen, frequently not even taking the temperature. The midwife in her turn, though more efficient than the handywomen, is inclined to visit only in the morning and to omit Sunday. There is no suggestion here of the need for careful dressing, and the securing of efficient drainage for an open wound or wounds. No change in procedure is attempted even with a severe perineal or cervical laceration. After the ministration once in 24 hours of the midwife, the woman is allowed to change her own dressings and do what she can with the help of a neighbour.

The importance of careful nursing in the puerperium is well illustrated in the cases studied in this inquiry. In 52 of the 89 cases labour was normal, with no interference beyond the usual vaginal examinations, yet in 36 of these normal labours there was injury, incomplete evacuation, or both. Where the cervical injury occurred alone, as it did in nine cases, its presence was not even suspected, while the presence of placental and membranous fragments in utero was not considered possible, even in cases where considerable quantities were subsequently evacuated. The importance of careful dressing and observation during the puerperium, with early and energetic treatment, is obvious. The attendance and nursing in domestic midwifery practice are far below the hospital standard,

and taking this into consideration the actual amount of sepsis is very low.

(*b*) *Home Conditions.*—The small influence of the general environment of the patient on the incidence of puerperal sepsis is at first sight somewhat remarkable, but it is after all only another illustration of the greater liability to infection from a personal agent which is being so widely recognised in infective conditions generally. Probably the only important influence of environment on the incidence of puerperal sepsis is through the effect on the general health with a consequently lowered resistance, but even here the effect is seen less on the incidence than on the death-rate. Thus:—

Health of mother in all cases (total 89)—		
Good, 64 (71%)	Poor, 15	Bad, 10
Health of mother where death followed (total 19)—		
Good, 11 (59%)	Poor, 3	Bad, 5

The home conditions appear to be in themselves an almost negligible factor apart from the type of attendance and nursing available. In only three instances in this inquiry was it possible to account for the infection by the environment alone.

Local Conditions.

(*a*) *Injury.*—It is not easy to exaggerate the importance of this factor in the liability to puerperal infection. It is the most frequent cause of phlegmasia alba dolens and cellulitis. Very many cases of prolonged disability follow both these conditions, while no one can overlook the disability resulting from a badly torn and unrepaired perineum. The great majority of these cases are not notified as puerperal sepsis. It is only the more severe and generalised infection which is notified, yet among the 89 cases under consideration injuries were present in 44, or 49 per cent., and in 11 the injury appeared to be the only cause of the infection, there having been no undue interference or incomplete evacuation. The *nature* of the injuries was as follows:—

Perineal tear alone	11
Cervical injury alone	9
Cervical and vaginal injury	5
Vaginal injury	2
More than one injury including perineal tear	17

Severity.—Very extensive, 4; very severe, 12; severe, 15; slight, 13.

Such injuries are in a majority of instances inevitable, but their presence should be ascertained, and when ascertained suitable treatment applied. The point is that no special care is employed to obviate or minimise infection with the result indicated. At the same time, there can be no doubt that with adequate antenatal care, including careful abdominal examinations, the larger proportion of the severe injuries could be eliminated, and with them the gravest risks to the patients.

(*b*) *Imperfect Drainage and Incomplete Evacuation.*—In this inquiry 49 cases, or 52 per cent., showed incomplete drainage or evacuation. This varied in degree, but in 25 cases considerable placental fragments were subsequently removed. It appears certain that in far the largest proportion of cases injury and imperfect emptying of the uterus play a predominant part. In fact, in only 25 of the 89 cases were neither present—i.e., in only 28 per cent.

While injury of a severe type was naturally found to a predominant extent in instrumental labours, it must be emphasised that such labours form only a proportion of those in which the two factors under consideration play a part in the onset of sepsis. The number in which both or one occurred was 65, or 73 per cent., and in 36 of these cases the labours were apparently normal without interference of any kind beyond the usual vaginal examinations.

(*c*) *Presence of Tumours.*—This is a comparatively rare complication, but it is one that should not be overlooked. Two cases with fibroids occurred in this series, and in both the tumours became infected, leading in one case to death. Both women were elderly multiparæ, and this serves to indicate the importance of antenatal examination even in this class of patient, since this would have obviated much of the risks.

General Health and Hæmatogenous Infection.

Reference has already been made to this under "Environment," and it is obvious that a lowered resistance must result from any condition leading to general debility. Rather unexpectedly, however, the effect appears as making the prognosis worse after infection has occurred, rather than increasing the risk of sepsis. These women if they escape sepsis suffer from post-puerperal anæmia and debility, but no evidence is available that *in the absence of other factors* they suffer from a greater liability to sepsis. This modifies one's views as to the part played in hæmatogenous infection in puerperal sepsis. Probably with a local factor the presence of an infective nidus elsewhere increases the liability to, and the severity of, a puerperal infection, but without a local factor its occurrence appears problematical, since septic foci of one kind or another, especially of the mouth, exist in such a high proportion of mothers with no ill-effects. In this series one case was very suggestive. The patient suffered from a whitlow at the onset of labour, and subsequently died with a definite septic endometritis and thrombosis in the left broad ligament. There was, however, placenta prævia, and a bipolar version was performed, considerable hæmorrhage occurring.

Epidemic Form of Puerperal Sepsis and the Rôle of the Carrier.

Undoubtedly the part played by the carrier in puerperal sepsis is now of considerably less importance than in the past. Owing to the general recognition of the danger and the strict supervision of midwives, outbreaks are less frequent, but they still occur. The danger of carrying infection through an attendant from patient to patient is, of course, a very real one, and is constantly being illustrated in small and inefficiently run maternity homes. There is, however, another type of carrier infection which is in a sense even more dangerous since it is not so clearly recognised—viz., where the attendant suffers from an infective condition, such as a septic throat, a nasal catarrh or a sinusitis, and produces septic infection among her patients. These may be mild cases or the reverse. In this series such an outbreak occurred. A probationer nurse doing her district training attended, while suffering from a cold and sore-throat, several confinements which subsequently developed symptoms of mild sepsis. One of these cases was notified. The patient suffered from marked parametritis and phlegmasia alba dolens with considerable pyrexia. Medical officers whose duty it is to supervise the work of midwives are familiar with this type of puerperal sepsis; it is difficult to guard against, as the possibility of its occurrence is not sufficiently emphasised in midwifery training.

Early Diagnosis and Treatment.

The above may be taken as the main factors concerned in the onset of puerperal sepsis. Sepsis having actually occurred, however, the important thing is the prevention of death, disability, and spread. Of the last nothing more need be said, but the importance of early recognition and treatment is so paramount that insistence on any point bearing on them cannot be omitted. In this connexion the time of onset is of interest. In the cases investigated in this inquiry the onset in 79 of the 89 cases was in the first week, while in 52 cases, or 57 per cent., the onset was within the first three days. Yet of the 72 cases sent to hospital only 32 were sent in the first week. There is undoubted delay in many cases. On the other hand, in eight cases the onset definitely occurred after the eighth day, and these late cases are important, since an impression appears to be prevalent among midwives that puerperal sepsis does not occur after the eighth day. The death-rate in this series was 21 per cent. Nineteen women lost their lives. Contrasted with the death-rate of other

infections this is very high. Among these deaths, the points which call for special comment are the high proportion of normal labours, 49 per cent., and the high proportion of women in bad health, 42 per cent.; 25 per cent. of the deaths were in primiparæ. The actual cause of death was general peritonitis in 42 per cent. of the cases. In all but one case there was delay in securing hospital treatment, which certainly in a proportion of the cases was apparently responsible for the fatal result.

Antenatal Care.—In no case was any antenatal examination made by a private medical practitioner nor was the urine examined. In 19 cases the patients had attended clinics at hospitals and child welfare centres, and in four cases midwives had examined the urine. This was the extent of antenatal care in this series.

Abortions.

During the period of the inquiry 35 abortions were notified as puerperal sepsis; of these 25 were septic cases, and four deaths occurred. Abortions, however, present rather a different aspect of the problem and should be considered separately. One point requires emphasis, however—the need for early and skilled treatment.

Conclusions.

It is clear that the prevention of puerperal sepsis and a diminution in its mortality are dependent upon an improvement in (*a*) management of and attendance at childbirth: (*b*) nursing in the puerperium; (*c*) provision for treatment; (*d*) antenatal care.

(*a*) *Improved Management of and Attendance at Childbirth.*—A normal labour is a physiological event and so the presence of the medical attendant is not required. It borders, however, on the pathological, and for this reason a skilled and highly trained midwife should be in attendance, capable not only of using surgical cleanliness during labour but of readily diagnosing any untoward happening requiring medical intervention. Such medical intervention, when required, should be given by an obstetrical surgeon specially trained for the work, since his aid is sought only when the case is already pathological. It has recently been suggested by Prof. Louise McIlroy that the situation should be met by appointing whole-time obstetricians in the public health service who could be called in by the midwife. While agreeing with Prof. McIlroy that it is only the obstetrical surgeon who can suitably deal with these cases, one cannot agree with her as to the method of supplying the need. The public health service, as at present constituted, is not a national service, all its activities depending on local authorities, whose views diverge widely on every medical question, and few of whom can be relied on to take long views. We already have a national medical service which is uniform throughout the country, and which is centrally controlled and guided—viz., the National Insurance Medical Service. Under the insurance scheme something is already being done for maternity, in the form of maternity benefit. Additional benefits—e.g., dental benefit—are being included in the scheme. There appears to be no sound reason why an approved maternity service should not be provided, replacing if need be the present maternity benefit. Under such a scheme a panel of midwives could be arranged whose work would require to conform to a definite standard, and at the same time a panel of obstetrical surgeons with special training and experience could be arranged, not only to attend the difficult cases but to undertake antenatal care in every case. Antenatal care should not be left to the midwife. She can do a limited amount, and should be expected to do that amount, but a thorough medical examination is required in every case in the later months of pregnancy. There appears to be no reason why public health authorities should not when possible allow suitable child welfare centres to be used for such antenatal work where such an arrangement is considered convenient. Such a service would put midwifery practice on an entirely new basis. While encouraging younger medical men and women to specialise in obstetrical work, it would be no hardship as far as those doctors are concerned who are already specially interested in this work. It need not be a condition that other forms of practice are necessarily given up, but it should be clearly understood that a general panel of more than 500 is not allowed. It is not possible to combine specialised obstetrical work with a large panel practice. In rural areas some modification of such a rule may be required, but there should be no serious difficulty in cities. The need for more maternity beds is constantly being emphasised, and is an obvious and urgent feature of any scheme for an improved midwifery service. The cost of such a scheme need not be prohibitive, while its influence not only on maternal mortality in childbirth but on the incidence of neonatal deaths among infants should be considerable.

(*b*) *Improved Nursing in the Puerperium.*—A detailed consideration of a series of cases must impress the importance of this factor on any observer. The proportion of normal labours is so high that some other factor must come into play apart from the mismanagement of labour. It is a point on which sufficient stress does not appear to have been laid. Probably medical opinion has failed to realise the actual circumstances, not so much from lack of knowledge as from lack of visualising the conditions. This has already been dealt with, however. Under present conditions no midwife can give adequate attention in the puerperium. In order to earn her living she must take an excessive number of cases. If improved nursing is to be secured improved payment is essential. It becomes once again a financial question.

(*c*) *Improved Provision for Treatment.*—The provision made by many local authorities for the treatment of puerperal sepsis is inadequate and unsuitable. It is not possible for the medical attendant to insist on his patient consenting to removal unless he feels that such removal will lead to satisfactory treatment by skilled obstetricians. The mortality of the condition cannot be lowered without improvement in this direction.

(*d*) *Improved Antenatal Care.*—While antenatal care is probably of less importance than the previous factors, there is no doubt that a considerable percentage of cases could be prevented by ascertaining the likelihood of a difficult labour and making suitable preparations. The importance of antenatal care is seen even more markedly in the other causes of our high maternal mortality. A better training in midwifery for both doctors and midwives is being urged in every direction, and it is undoubtedly the first and most important step. But in this paper an attempt has been made to consider other aspects of the problem.

OBSERVATIONS ON SOME CASES OF POST-ENCEPHALITIC PSYCHOSES.

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UNDER an arrangement originally emanating from the Board of Control the majority of cases of post-encephalitis in L.C.C. mental hospitals have been transferred to West Park Mental Hospital. A study of these cases has been made in the hope that some new light might be cast on the intricate problem of mental sequelæ in this disease. The number of cases collected is surprisingly small, even allowing for the fact that not all cases have so far been sent to West Park. Nine male and three female cases comprise the total number. In the case of three of the males the diagnosis is very doubtful, and in another, a man of 63 years of age, paralysis agitans is present, but unless the theory is held that this and encephalitis lethargica

are one and the same, there is nothing to suggest that the condition is post-encephalitic. This leaves eight cases which have undoubtedly suffered from encephalitis lethargica, and the following observations concern these only.

The two points on which I think these cases throw light are, first, the supposition of the progressive nature of this disease, and second, how far these psychoses can be regarded as true sequelæ of encephalitis lethargica (E.L.). No fewer than five of the eight cases support the contention that the virus continues present and potent in the central nervous system for considerable periods after the subsidence of the acute symptoms, somewhat as in the case of "parasyphilis."

Cases Illustrative of this Supposition.

CASE 1.—A woman, aged 36, married, had E.L. in 1920, when she was in deep stupor for two months. Admitted to Cane Hill Mental Hospital August 1st, 1922, with Parkinsonian syndrome present, right pupil dilated and practically fixed, left pupil normal. She had good insight into her condition, appreciated the enfeeblement of her self-control, was apathetic, but exhibited little or no dementia, and could give a good account of her illness. She has gradually become worse, is now totally dependent, faulty in her habits, very apathetic, and exhibits much dementia. She improved for a time on hyoscine, but this only delayed her downward course temporarily.

CASE 2.—A single man, aged 50, E.L. in March, 1924, with drowsiness, giddiness, diplopia, macropsia, ptosis, nystagmus, irregular sluggish pupils, restless and fidgety especially at night, drowsy by day, sleepless by night, sometimes an occupational delirium. He slowly improved and was sent to a convalescent home in May. Three weeks after being sent home apparently well, in July, he became depressed and attempted suicide by cutting his throat, and was sent to Claybury Mental Hospital. His physical signs are now very slight. His pupils are small, equal, irregular, react sluggishly to L. and A., convergence fair, lateral nystagmus; slight incoördination of upper extremities; slight paresis of facial muscles; deep reflexes normal, superficial including palatal and pharyngeal absent. He now exhibits a paranoid psychosis, is depressed and agitated, has auditory hallucinations and delusion that he is accused of "messing about with little children," and other immoralities, and thinks he has enemies who are plotting against his life. He is drowsy by day and sleeps badly, but is capable of occupying himself in the grounds. He is a mental defective who only reached standard II. at school, and his intellectual enfeeblement is doubtless due to his mental deficiency. Hyoscine appeared to aggravate his mental symptoms and had to be discontinued after a few weeks.

CASE 3.—A single man, aged 30, had attack of E.L. in March, 1924, with constipation, fever, herpes left shoulder, diplopia. After three consultations, one at St. Bart.'s, it was decided that this was not E.L. He improved rapidly, and had returned to work by end of April. A robbery which took place at his workshop upset him very much and aggravated the "neurasthenia" present, and another consultation now led to a diagnosis of E.L. His present physical signs show the distinct progressive nature of his disease with involvement of region of third nucleus (ptosis, diplopia), pyramidal tracts (K.J.'s +, Babinski), facial nerve nucleus (facial flaccidity). His emotional facility and dementia show the involvement of his basal ganglia and cerebral cortex respectively. He is acutely depressed, full of morbid fears, has hypnagogic hallucinations which usually take the form of grotesque animals, and which terrify him though he recognises their hallucinatory nature. He is much occupied by pains in his abdomen and chest which he describes as "pulling." His memory is very bad, and he gives a very poor account of himself and his illness. He is often difficult with his food, sometimes faulty in his habits, and is continually asking to be allowed to die. Hyoscine seemed to make him worse.

CASE 4.—A single man, aged 50, had E.L. in May, 1920, or in the patient's words he was "ill with influenza and went dotty." He showed inversion of sleep rhythm, and was very noisy by night. After five weeks he was sent to Claybury Mental Hospital, but was discharged after six months and returned to work. He still felt "nervous a id dull," however, and had to attend Guy's Hospital as an out-patient with the following symptoms: Insomnia, feeling of agitation, fear of traffic, attacks of "shaking all over," constipation, and retention of urine for 36 hours on one occasion. He had to discontinue work after four months, and seven months later he was again certified and was sent to Long Grove Mental Hospital. He now exhibits Parkinsonian syndrome with its mask-like face, general spasticity, festinant gait, retropulsion, pill-rolling movements, cramps in legs, athetoid movements in arms, coarse tremors of hands, slight intention tremor, slurring monotonous articulation. His deep reflexes are sluggish, his superficial normal; pupils moderate size, R.>L. irregular, react sluggishly to L. and A. Mentally he is dull, depressed, solitary, only speaks when spoken to and then in monosyllables, is morbidly introspective, very childish, very dependent, and exhibits emotional facility. He is of degraded habits, very untidy and given to spitting about on the floor. He has a very bad family history, one brother being insane, another having died insane, also a paternal uncle; his mother was a drunkard. Hyoscine 1/150 gr. daily makes him feel brighter and less spastic.

CASE 5.—A single man, aged 22, had E.L. in March, 1924, with lethargy, ocular symptoms, &c. He was able to return to work in July feeling quite fit, but in September he had to give up work and has become progressively worse since then. He now presents the Parkinsonian syndrome with its characteristic gait, attitude, articulation, &c. In addition he has myoclonic jerkings in all four limbs. He is extremely depressed and miserable, is aurally hallucinated, and has delusions of persecution. He has made two determined attempts at suicide by strangulation, and still harbours strong suicidal tendencies. There is no dementia in evidence.

In Cases 1 and 2 there has been no progression as far as the physical signs are concerned, whereas in Cases 3, 4, and 5 these have become more extensive, and especially in Case 3. In all four have the mental symptoms become more marked, and if these psychoses are true sequelæ in the sense of being due to changes in the central nervous system caused by the virus of E.L., then it must be supposed that the virus has continued present and actively potent in the cerebral cortex of these patients. Certain significant facts, however, are present in two of these five cases to throw doubt on the nature of their psychoses. I refer to the stability of the central nervous system of these patients prior to their attack of E.L. Thus Case 4 has an insane heredity, and Case 3 is a mental defective, and his psychosis is very typical of a form of mental disease often got in mental defectives from mental stress.

Of the three other cases two are mental defectives, so that out of the eight cases five may be regarded as having been of unstable mental equilibrium prior to their attack of E.L., and in these cases it is very possible that their psychosis is not a true sequela, but should rather be regarded as of psychogenic origin, the mental stress due to their illness being in the nature of a psychic trauma. One of these mental defectives is a woman of 35, who exhibits the Parkinsonian syndrome, and a definite dementia superimposed on her mental deficiency. The other is a boy of 10 years of age, who had his attack in May, 1924, with ocular symptoms, inversion of sleep rhythm, myoclonic twitchings of the legs, &c. He passed into the "apache" type of Hall, with homicidal and suicidal tendencies. He attempted to cut his throat with a large knife. Under institutional life his behaviour has improved considerably, but he has periods lasting for several hours, and especially frequent by night, when he is aurally hallucinated, confused, restless, talkative, and noisy.

It is of interest to note that three of these eight cases attempted suicide and that another has strong suicidal tendencies. Suicide is regarded as an extremely rare occurrence in epidemic encephalitis. Some authorities hold that a true systematised delusional state is not got in post-encephalitic cases, but Cases 2 and 5 exhibit this state. As previously noted, it is, of course, possible that the psychosis of Case 2 is not a sequela in the true sense of the word. Some observers hold that dementia is not got as a post-encephalitic mental sequela. Cases refuting this statement have been recorded in the present series.

The mental symptoms observed in the acute phase of the disease are largely of toxic origin, and if a definite psychosis results it is very similar to cases of toxic psychoses from other causes—e.g., typhoid fever. One of the female cases in this series was of this nature, and she has recently been discharged, her

mental symptoms having cleared up, though she still presents the Parkinsonian syndrome.

Conclusions.

1. Certifiable insanity is extremely rare as a sequel to E.L. 2. It is highly probable that the virus of E.L. has the power of remaining in the central nervous system in a potent form long after the subsidence of the acute symptoms. 3. Many cases of insanity following E.L. may not be true sequelæ, the encephalitis merely acting as a precipitating psychic cause. 4. The possibility of suicide following E.L. must not be lost sight of. 5. Systematised delusions and dementia are sometimes found in post-encephalitic psychoses. 6. Psychotic symptoms during the acute phase of the disease are toxic in origin and of much better prognosis than post-encephalitic psychoses. In the very rare event of a recovery in the latter it is practically certain that the case would not be one of a true sequela but of the secondary psychic type.

I take this opportunity of thanking the medical superintendent of West Park Mental Hospital for permission to publish these preliminary observations.

GLYCOSURIA AND PRURITUS

DEPENDENT UPON LATENT DISEASE OF THE APPENDIX.

BY W. SOLTAU FENWICK, M.D.

A SURVEY of the clinical notes of 4000 cases of visceroptosis which had come under the writer's observation brought into prominence several interesting results of this abnormal location of the abdominal organs. Colitis existed in about 30 per cent. of all cases after the age of 30 years, although in many instances it was so slight in character that it would have escaped attention had it not been for the exaggerated importance attached to the presence of a little mucus in the stools. Appendicitis was noted in 23 per cent. of all cases and was equally common in the two sexes. In rather more than one half of the cases the appendix had already been removed, in some instances for definite symptoms of inflammation, but more often, apparently, with the expectation of curing the coexistent dyspepsia. The fact that chronic inflammation of the appendix in visceroptosis is usually an expression of a diffuse catarrh of the entire colon serves to explain why the operation is rarely followed by permanent amelioration of the gastro-intestinal disorder. When the appendicular disease remains free from clinical manifestations for many years it is sometimes accompanied by at least two interesting phenomena which do not seem hitherto to have attracted attention—namely, glycosuria and pruritus.

Glycosuria.

The ætiological connexion between sugar in the urine and disease of the appendix was first brought to the writer's notice in 1902 by the case of a young man who had exhibited intermittent glycosuria for five years. At the end of that time an operation was performed for acute appendicitis, with the surprising result that the sugar disappeared from the urine within a month and never returned. The same sequence of events ensued in four other cases, and further experience seems to indicate that the condition is not so rare as the writer had supposed it to be. In all the cases seen by him up to the present time the patient was the subject of congenital gastro-coloptosis accompanied by mild chronic gastric hypersecretion. No history suggestive of appendicitis was ever obtained nor were any signs of the disease detected. Male subjects exceeded the female by nearly three to one, a fact which is noteworthy in view of the much greater liability of women to visceroptosis. The average age at which the patients came under observation was 22 years, and in several instances the sugar had first been detected at a medical examination for life insurance. Thirst and polyuria were never prominent symptoms, and the amount of urine voided in 24 hours seldom exceeded 60 fluid ounces. As a rule, complaint was made of general debility, lassitude, mental depression, sudden variations in the weight of the body, and occasionally of pain in the lumbar spine. A sudden access of muscular weakness, attended by loss of weight, frequently heralded a recurrence of the glycosuria. The amount of sugar in the urine usually varied from 0·08 to 0·3 per cent., and its existence was never accompanied by any notable increase of the sugar in the blood. It was more often detected in the urine passed before midday than at other times, and frequently disappeared entirely for several weeks in succession. At operation the appendix invariably showed signs of chronic inflammation, but no calculus, ulceration of its mucosa, or peritoneal adhesions were recorded unless there had been a recent attack of acute inflammation. After operation the sugar disappeared from the urine and did not recur in the cases which remained under observation, which in one instance extended for nearly 20 years. It seems probable that the gastric hypersecretion excites inflammatory changes in the pancreas in persons who possess a proclivity to such disease, in the same way that other varieties of the gastric disorder are often followed by glycosuria and even by genuine diabetes.

Pruritus.

Another rare and peculiar condition which sometimes develops as a result of latent appendicitis is intense itching of the skin. Four characteristic examples occurred among the series of cases to which reference has been made, and several others of a similar type have more recently come under the writer's observation. The complaint seems chiefly to be confined to women about middle age, and when once established it remains persistent and defies all ordinary methods of treatment. Its characteristic feature is excessive irritation of the skin over the lower part of the abdomen, which develops about one hour after the patient has retired to bed and continues with scarcely any intermission for several hours. The irritation is often described as being "under the skin," and was likened by two patients to the sensation of a maggot burrowing its way through the subcutaneous tissues. It is never accompanied by a visible eruption, and the most energetic scratching and rubbing afford no relief; but the application of pressure or hot fomentations occasionally allays the pruritus for a time. In other cases, or at other times, the sensation is one of intense scalding or burning, sometimes accompanied by hyperæsthesia of the skin, while occasionally the irritation attacks in succession the buttocks, flexures of the forearms, popliteal spaces, or the interscapular region. In one case a woman's existence had become almost intolerable by reason of the itching of the skin of the abdomen which occurred one hour after going to bed and persisted until 5 o'clock in the morning, when she was suddenly seized with acute appendicitis which necessitated removal of the appendix. A week later it was found that there had been no nocturnal pruritus since the operation and since then the complaint has never recurred. The same result ensued in the other cases. In yet another instance where the typical pruritus over the abdomen at night led the writer to advise appendicectomy, the patient was attacked with appendicitis in the country, which subsided under medical treatment. On her return to town six months later she stated that the irritation had gradually subsided during convalescence and was then a negligible symptom. In this case it would seem that the acute inflammation of the appendix had either destroyed the source of some special toxin or had so impaired the nervous elements of the appendicular mucous membrane as to inhibit the production of reflex phenomena. In more than one case the appendix after removal was found to be packed with fæces of stony hardness.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTIONS OF PSYCHIATRY, NEUROLOGY, EPIDEMIOLOGY, AND DISEASES OF CHILDREN.

A COMBINED meeting of these Sections was held on Jan. 27th, Dr. R. H. COLE, Vice-President of the Section of Psychiatry, in the chair. The adjourned[1] discussion on the

MENTAL SEQUELÆ OF ENCEPHALITIS LETHARGICA

was opened by Dr. J. C. SPENCE, who approached the subject from the aspect of the child patient and of prognosis. In his experience 30–40 per cent. of the cases were under 12 years of age, and the after-results could be divided into two groups according to whether the incidence was before or after the third year. In infants under 3 a severe amentia was usual, but after the fourth year a true idiocy had never been seen by him, and the impairment of the intellect was not a marked feature, such cases being characterised rather by emotional and volitional defects. In the Parkinsonian type there was apathy, accompanied by diminished volition, lack of initiative and interest, while in the difficult or apache child there was perversion of volition accompanying the restlessness, noisiness, and impudence. Dr. Spence stressed the danger of pronouncing a cure prematurely, quoting a case which showed a relapse to the "difficult child" condition five years after the acute attack, and after three years of apparent normality. In the epidemic in Newcastle in the spring of 1924 they had found that the old oculo-lethargic type of case no longer occurred, the common onset being of an acute painful myoclonic type, with difficulty diagnosed from acute rheumatism or an acute abdomen. Such cases showed widespread involvement of the spinal cord post mortem, but were less liable to mental sequelæ. Dr. Spence referred to a statement made by Dr. Donald Paterson and himself (THE LANCET, 1921, ii., 491) to the effect that the longer the acute stage of the illness the greater the degree of mental disturbance to be anticipated; this he no longer believed to be true; severe permanent damage to the intellectual functions might result from an acute illness of two days' duration only, but the great factor in prognosis was the night restlessness, which seemed to be directly proportional to the subsequent mental derangement. The persistence of physical symptoms—i.e., Parkinsonism, rigidity, stolidity of features—was accompanied by some mental sequelæ—apathy at least, if not more marked mental failure. Diagnostic pitfalls, in addition to the well-known ones of acute rheumatism, influenza, &c., included juvenile general paralysis, cerebro-spinal fever, and pellagra, cases being on record where these latter conditions had been taken for encephalitis lethargica.

Dr. C. WORSTER-DROUGHT agreed with previous speakers that certifiable conditions were rare, taking the form of progressive dementia, delusional states or hallucinatory confusion if present. The minor degrees of psychosis were, however, common, with apathy, lack of spontaneous interest and initiative, and rapid fatigue on mental effort. He believed that the apathy was often more apparent than real, and that there was very little impairment of intellect, the main feature being a retardation in the somatic efferent component of the nervous system. He referred to the experiments carried out by Dr. D. N. Hardcastle and himself, an account of which appeared in the *Journal of Neurology and Psychopathology* for August, 1924. They had found that the psycho-motor reaction was distinctly lengthened (by 50 per cent.), but that the cerebration time for selection was normal or a little less than normal. Only three of their 19 cases had shown a subnormal result in general intelligence tests, and these had presented defects under the headings of Reason and Memory. He considered that the psychoneuroses following encephalitis lethargica were due to diminished inhibition, rendering manifest a condition previously latent, but controlled. The symptoms were generally apprehension, undue self-consciousness, a-sociability or terror-dreams. Moral deterioration was probably to be ascribed to the same cause, and the prognosis in this condition was good. He agreed with the necessity for giving a very guarded prognosis, and referred to a case showing mental lapse after four years of apparent recovery.

The Psychological Aspect.

Dr. D. N. HARDCASTLE remarked that 17 of the 19 cases experimented on by Dr. Worster-Drought and himself were of the Parkinsonian type. The aspect he particularly wished to stress was the psychological. Twelve of the cases showed psychoneurotic symptoms such as anxiety, phobias, and terror dreams, and in two of these cases the phobias and anxiety had been removed by psychotherapy, a marked improvement in their condition being thus produced. No alteration to the organic brain lesion could have been effected by such measures, and Dr. Hardcastle suggested that the mental changes in this type of case were not so much dependent on direct injury to the cortical areas as on a failure of adaptation to the environment, which was rendered a much more difficult task by the crippling lethargy and psycho-motor retardation. Prof. Arthur Hall had likened the difficult child to a psychasthenic, and Dr. F. C. Shrubsall had called attention to similar psycho-neurotic symptoms following influenza—viz., rapidity of fatigue, lack of concentration, failure of continuity of attention, &c. The characteristic disturbance of the sleep-cycle had also been noted among shell-shocked soldiers. Referring to the statement that there was impairment of memory for the period of the illness, Dr. Hardcastle stated that he had not found this to be the case in any greater extent than is usual in other serious illnesses with delirium. Patients gave detailed histories of their attack, broken only by the periods when they were actually asleep. The onset of the mental changes did not coincide with the onset of fever or with defervescence. Often there might be an intervening period of apparent normality before the lethargy was established and with it the first appearance of mental symptoms. Dr. Hardcastle agreed with the observation of Jones and Raphael that a psycho-neurosis latent before the illness might become apparent after it, and he applied this also to a latent psychosis.

Dr. E. MAPOTHER reported on 45 cases which had come under his care at the Maudsley Hospital. These he divided into three groups: (1) Mental anergia, ranging from difficulty in sustained attention to morbid sleep; (2) morbid restlessness; and (3) demoralisation. He pointed out that the latter two groups were far more likely to behave in a manner necessitating conveyance to a mental hospital, and that therefore the proportion of this type met with in such institutions did not give a true picture of the proportion occurring on the whole. Dr. Duncan, in following up the after-histories of cases at the London Hospital, had formulated the rule that positive mental symptoms at the onset were negligible for prognosis, but that negative early symptoms were very ominous; this ruling had not been supported by experience at the Maudsley, and no satisfactory formulations had been obtained. Marked restlessness was most common in children under 8, and demoralisation in cases between 8 and 20 years of age. Both were rare in adults, in whom anergia was the commonest symptom. Anergia seemed to be most commonly present in association with organic Parkinsonism, which was not usually coincident with marked restlessness, but in both cases the reverse condition was sometimes met, and both anergia and restlessness might be paroxysmal

[1] See THE LANCET, Jan. 24th, p. 181.

or even alternate. He agreed with previous speakers that none of the post-encephalitic cases resembled the ordinary psychoses, the chief symptoms being very marked conative disturbances, with spontaneous variations from time to time. In the absence of somnolence, negative intellectual disturbances were slight, and were mostly to be explained by inattention. Delinquencies were the result of the failure of inhibition, the wish passing almost directly into the act, while the individual recognised abstractly the nature of his behaviour. The children were markedly free from fear, the strongest of the inhibitions. There was no evidence of delusions or hallucinations or of dreams in the drowsy states, with the exception of one case—a barman who ejaculated at intervals "Time, gentlemen, please!" The lying met with seemed to be conscious lying; unlike the hysterical phantasy, half-believed by the patient. On the whole, apathy seemed commoner than excess. The one case of attempted suicide ascribed her effort to her distress at her total loss of feeling. The spontaneous variations in the symptoms suggested a continuous active process and was responsible for the rarity of certification; the cases only needed institutional treatment if they were incapable of self-support or a nuisance to their neighbours. The diagnosis from functional conditions was very hard and should depend on the presence of physical signs—Parkinsonism or nerve palsies—however tempting mental symptoms might be. There was much increase of capacity possible with increased attention and effort, habit and automatism playing a distinct part in the maintenance of symptoms of inefficiency.

Dr. J. G. FORBES referred to three cases in which encephalitis lethargica complicated epilepsy, and to the difficulty of distinguishing between post-epileptic conditions and the lethargy of encephalitis.

Dr. A. GILMOUR described two cases of late mental sequelæ after apparent recovery.

Dr. H. CRICHTON-MILLER referred to the beneficial effect of hyoscine on apathy and anergia and asked how this action was explained, since there seemed no other instance of reintegration of the psyche resulting from the administration of a sedative.

Dr. ALICE M. HUTCHISON asked if there was any consensus of opinion as to how long children should be kept from mental work after an attack.

Dr. WORSTER-DROUGHT remarked that he had had four cases of epilepsy following encephalitis lethargica attending the West End Hospital. He had found that hyoscine lessened tremors and rigidity, but that it was necessary to continue its administration permanently.

Dr. P. C. P. CLOAKE observed that there was very often some history of psychic trauma at or about the time of onset of the disease. He disagreed with Dr. Worster-Drought's conclusions as to the absence of psychic retardation, believing that tests designed to eliminate motor phenomena showed considerable psychic involvement, acting primarily in the region of the psychic "fiat" which sets an action going. He had found hyoscine active only on injection, and ascribed its effect to the sedative action on the cerebrum and motor nerve-endings in muscle, and doubted whether it had any effect on the psychic condition. He considered that the longer children were kept from school the better, and reiterated the opinion expressed in his earlier paper, that the essential feature of the disease was the organic injury to the cortex resulting from the action of a toxin, whereby the highest functions (e.g., inhibition, adaptation) were most damaged.

Dr. COLF, in concluding the discussion, raised the question of the infectivity, and the reluctance of some institutions to admit cases for this reason. He also pointed out the difficulty of deciding whether a child had better be certified under the Lunacy or Mental Deficiency Act, and expressed the opinion that hyoscine should be used in emergencies only, as it had a deteriorating effect on the nervous tissue and made the patient very uncomfortable. Although it undoubtedly did good in Parkinsonian cases, he thought the cure worse than the disease. He advocated the use of urotropine.

SECTION OF UROLOGY.

A MEETING of this Section was held on Jan. 29th, Mr. CYRIL A. R. NITCH, the President of the Section, being in the chair, when Dr. N. S. FINZI opened a discussion on

RADIOTHERAPY AND ELECTROTHERAPY IN DISEASES OF THE BLADDER AND PROSTATE.

He said he considered that there was a great future for radiotherapy, at any rate in diseases of the prostate. Radium could be used on the skin, over the skin in the region of the pubes and sacrum, and even the perineum, the latter being extraordinarily sensitive to radiation. Used in this way, however, radium was ineffective unless given in large quantities and by several ports of entry. There must be protection afforded by a pad of felt or wax 2 cm. from the skin. A dose of 500 millicuries should be used. Radium had also been used per rectum, but on account of the sensitiveness of the rectal mucous membrane and the fact that burns occurred without effective result, it had now been given up. Still, in 1909 he succeeded in securing a successful result by this method in a case of tumour of the prostate region. The tumour was probably a recurrence of a teratoma of the testicle, the testicle having been removed some time before in South Africa, and the notes of the case could not be obtained. That patient was certainly alive two years ago and probably was still living. Seven years after the treatment there was a degree of rectal stricture.

In attempting to give effective doses of radium per urethram so much sloughing resulted as to constitute a danger; he believed this route had been generally abandoned in prostate cases. Even as an adjunct to other methods, the urethra tended to receive too large a dose, and outlying regions of the prostate too small a one. He suggested, in 1910, the perineal route for burying radium in the prostate, but he was unable to get it carried out. During the last few years that method had been used in Brussels, platinum needles being introduced by an incision in the perineum. Multiple needles ensured a more uniform distribution of the irradiation over the required area.

With regard to X rays, the modern method was to use greater filtration—i.e., 0·5 to 0·8 mm. of copper with 3 mm. aluminium, and at the same time to use more penetrating rays by employing a higher voltage. Also, some eight or ten portals of entry were used. Where multiple portals could not be used, and the front, back, and two sides were the only directions available, the tube was placed at a greater distance and larger fields secured. This was the means used when the disease was widely spread in the pelvis. In some cases a combination of radium and X rays was of distinct value, as also was a combination of diathermy and radium.

The Choice of Methods.

For simple enlargement of the prostate radium had not been largely used, as its external application had little advantage over X rays, and since very large quantities would be required, expense was a consideration. For this condition the embedding of radium in the prostate possessed no definite advantages over ordinary operative procedures. Moreover, if applied per urethram, it might cause ulceration, as also if used per rectum. X rays constituted a very suitable method of treating these simple enlargements, and possessed certain advantages over operation, such as (1) there was practically no primary mortality; with careful administration of the rays it was less than 0·1 per cent.; (2) there was not usually a prolonged convalescence, and the patient need not lie up; (3) no suprapubic opening was needed, and if complete retention was imminent a catheter could be tied in; (4) there was no danger of hæmorrhage afterwards, and the only skin damage resulting was a slight erythema.

There were some disadvantages attaching to X ray treatment of simple enlargements. Though in his cases one treatment had sufficed, it might not be so in every case. If subsequent operation should be required, it was conceivable that a previous application of the rays might make such surgery more difficult, on account of the fibrous formation around the prostate. The full benefit of the rays was not secured until three months after the application. And there was the possibility of treating in this way a case which was malignant. Small doses of X rays might increase cystitis and other inflammatory conditions. Considerable cystitis contra-indicated the use of the rays.

For malignant prostatic disease, multiple needles embedded in the prostate were being used in Belgium, and often in conjunction with X ray irradiation from the exterior. The perineal route was employed, and the asepsis must be most rigid. X rays by new means gave much promise for malignant prostate; he had seen improvement continue for a year after the use of the rays. For cases with a few papillomata of the bladder diathermy had supplanted radium. The difficulty was to secure homogeneous irradiation to the involved area.

In malignant disease of the bladder he had seen great relief follow the use of radium. It was used via the urethra, being placed in position under the guidance of the cystoscope, and was sometimes supplemented by doses per rectum or vagina. Subsequent applications had much less effect than the first. If operable, cases of malignant disease of the bladder should receive surgical treatment, and papilloma of the bladder was best treated by other methods, unless too large a surface of bladder wall was involved.

Discussion.

Dr. J. H. D. WEBSTER said that malignant disease of bladder and prostate constituted most difficult problems because the radiologist was not consulted until symptoms had lasted two or three years, so that the most promising stage had long passed. In only 2 per cent. of prostatic cases was the disease, when seen, confined to the prostate. In some reported cases, two weeks after radium had been employed in the form of small tubes for 900 mg. hours there was no evidence of malignant disease left, though in some of the sections a number of viable cells were still found. In America a preliminary X ray irradiation was given from umbilicus to symphysis, back and front, the dose being as large as the skin would stand, short of causing a burn. Radium needles were then inserted suprapubically or through the perineum. Americans removed growths of the bladder by diathermy first, then buried radium tubes into the base of the ulcer. Post-operative irradiation seemed to hold out some hope.

Dr. REGINALD MORTON said the radiologist did not confine himself to one technique. In malignant disease he was strongly in favour of giving a full dose of X rays at the earliest possible moment, as in cancer dissemination was the greatest complication which could arise. So long as the lesion remained local there was some hope. He was against temporising by giving fractional doses in these cases. Simple adenomatous enlargement of prostate responded well to treatment, and with proper technique good results ensued in nearly every case. He was not now speaking of fibrous enlargements due to infection. A single full dose ensured good results in three to six weeks; it was not necessary to administer such a large dose as to cause definite reaction. In the Erlangen method much stress was laid on accurate measurement of doses, though there was always a possible 15 per cent. margin of error. The manner in which a particular case would behave could not be forecast. More must be done in the way of preparing patients beforehand for irradiation and looking after them subsequently; 95 per cent. of the malignant cases passing through his hands were so far advanced that nothing beyond temporary amelioration could be expected. No real progress could be made in this department of work unless cases were seen at a much earlier stage, when there could be some hope of success; there should be an earlier and closer coöperation between the surgeon and the radiologist. As a class he considered that malignant disease of the prostate was favourable for radiation. He had not had such favourable results in malignant disease of the bladder; a large proportion of those cases were infected, and this complication rendered them hopeless. Success in this treatment depended on a healthy and vigorous reaction of tissue.

Dr. BROWN CARFIELD spoke of using 50 mg. of radium bromide enclosed in a tin tube for prostatic disease. He discouraged hurried treatment with radium and said it was important to avoid any destruction of tissue. Radium seemed to act by causing constriction of blood-vessels. He did not view with favour the use of a number of radium needles.

Mr. CLIFFORD MORSON said he thought it would be agreed that suprapubic prostatectomy in the hands of an expert was attended with excellent results, and could be regarded as a radical cure. He asked whether the radiologist could produce by his means the same result as the surgeon did. If he could, what was his evidence? An authority should cystoscope to ascertain the condition of the bladder before treatment, a renal function test should be carried out both before and after treatment, and it should be determined how much residual urine was present in the bladder before treatment, and again after that had been carried out. Sometimes the radiologist said the symptoms to a great extent disappeared after irradiation, but rectal examination showed that the prostate was still enlarged. Symptoms associated with an enlarged prostate were not entirely confined to the urinary organs. Cases which had been treated by X rays and had afterwards come to him for surgical measures had been complicated by (1) retention of urine, (2) by cystitis. Mottram had shown that after the application of X rays mucous membrane revealed definite degenerative changes, and his own experience confirmed the fact that degenerative changes followed inflammatory ones. Another complication was cystitis. The bladder mucous membrane was devitalised by the rays, and so was an easy prey to infective processes. The mere removal of prostatic obstruction was only half the treatment; the other half consisted in dealing with the changes in bladder and kidneys. In malignant disease of prostate he thought the only chance of eradication of the disease was by means of surgery, as in other organs of the body. He had been experimenting recently with a new electrical instrument on the lines of the cautery punch of Young, and his treatment of enlarged prostate by this means had been disappointing. In about 1 per cent. of prostate cases diathermy was of value—namely, those in which post-prostatectomy obstruction had taken place.

Prof. A. FULLERTON (Belfast) spoke of a case of carcinoma of the rectum in a woman, aged 36, who had deep X ray therapy applied by Dr. Morton two and a half years ago, and was now perfectly well with nothing remaining but a scar. One man with a large hard prostate had two doses of rays, and after the second he died; the speaker asked why such deaths occurred after deep therapy. He had tried radium tubes for papilloma of the bladder, but there was little radium in Belfast, and by the time the emanation reached him it was much reduced in strength. For these cases of papilloma he thought diathermy was the best method to date. For malignant disease of the bladder he did a large operation, removing a large slice of the viscus—even if the growth was small—and taking away the lymphatics.

Mr. FRANK KIDD said he agreed with Moynihan that cancer was a local disease. In adenoma of the prostate the results of prostatectomy were so good that it was for the radiologists to present accurate data concerning large numbers of cases treated by their methods for purposes of comparison, and in order that the profession could assess the value of their contentions. There

should also be a systematic following-up of cases and a comparison of after-histories. This was especially necessary in regard to cases treated by deep X ray therapy. In six cases of carcinoma of prostate so treated the result had been absolutely nil, although at first there seemed to be improvement, the prostate appearing to be smaller and softer. But he could not convince himself that the patient would live longer than if it had not been applied. He described a number of cases. He had only selected for X ray treatment cases of carcinoma of the bladder which he considered quite inoperable by surgical means. In one such case the man thought he had been cured by the rays, but examination showed he was still passing blood, and skiagrams showed that the growth had divided into two and gave more comfort for that reason. After two or three applications the X rays seemed to lose their power over the growth. It seemed that the irradiation knocked out certain cells, but the tumour then developed a type of cell which was unharmed by the rays. He was sure he had seen cases in which X ray applications had stimulated the enlargement, so that when the patient presented himself for operation he was in a very serious condition.

CHELSEA CLINICAL SOCIETY.

Exhibition of Cases.

A MEETING of this Society was held on Jan. 20th, with Dr. GORDON LANE, the President, in the chair. The evening was largely occupied with the demonstration of clinical cases.

Dr. A. FEILING showed two boys with marked signs of pseudo-hypertrophic muscular paralysis.

Mr. LAWRENCE ABEL showed a boy who possessed osteomata on the phalanx of one of the fingers and on the metacarpal of the thumb. He considered that they had been always bony. He showed a case of osteomyelitis, and one of osteogenesis imperfecta associated with multiple fractures. He also showed a case illustrating the advantage of avoiding the lacrymal apparatus in resection of the upper jaw for malignant disease; and a man with osteo-arthritis of the sterno-clavicular joints and of one hip.

Mr. A. R. THOMPSON showed a girl with bilateral renal calculi and evidence of stunted growth, associated with the renal trouble; also two men who had had the penis amputated for epithelioma, in one case four years ago and in another case five years ago. One of the patients had become the father of a child since the operation.

Mr. IVOR BACK showed an interesting case of dermoid of the floor of the mouth, and also a specimen of sarcoma of the fibula. This was a very rare condition.

The PRESIDENT showed a case of blackening and hypertrophy of the nails of the hands and to a less extent of the feet, which he suggested might be due to a psychic influence, as the patient gave an interesting account of a most gruesome occurrence during the late war.

Dr. ERNEST YOUNG gave an admirable demonstration of his duodenal tube, which had been of much service in cases of gastric trouble, and could also be used for medicaments and food, distributed to the duodenum without the intervention of the stomach.—The paper was discussed by Dr. G. H. HUNT.

Dr. J. D. ROLLESTON gave an account of a case of erythema infectiosum, which he illustrated with photographs. He suggested the name of "Fifth Disease" for it, thus carrying on the name of Fourth Disease, of which he said there were undoubted examples. He suggested that there might be epidemic conditions of the disease, but so far it had not occurred in epidemic form in England.

Reviews and Notices of Books.

A GLASGOW MANUAL OF OBSTETRICS.

By SAMUEL J. CAMERON, M.B., F.R.F.P. & S. Glasg., Lecturer in Clinical Obstetrics, University of Glasgow; ARCHIBALD N. MCLELLAN, M.B., L.M., Assistant to Regius Professor of Midwifery, University of Glasgow; ROBERT A. LENNIE, M.B., Assistant Obstetric Surgeon to the Glasgow Royal Maternity and Women's Hospital; and JOHN HEWITT, M.B., Assistant Obstetric Surgeon to the Glasgow Royal Maternity and Women's Hospital. London: Edward Arnold and Co. 1924. Pp. 573. 21*s*.

A TEXT-BOOK emanating from a group of men working at the same special hospital is always of interest, especially if the distinctive features of a certain school of thought and practice are exemplified. Dr. Cameron, in collaboration with three of his colleagues at the Glasgow Maternity Hospital, has written this book as a companion volume to his "Manual of Gynæcology." Glasgow is a city notorious for the prevalence of rickets and associated obstetrical difficulties; the experience gained by those attached to a teaching hospital there must be unusually varied, and the fruits thereof as here set out are likely to be of great value to students and practitioners. The book is essentially practical in character, while containing, except perhaps for the section on embryology, sufficient theory to fulfil the requirements of the student for an examination of the standard of the Final M.B. The subject-matter is lucidly expressed, and follows, for the most part, the accepted lines, whilst attention is paid to recent researches and their comparative value discussed. In the section dealing with toxæmias of pregnancy an excellent account is given of the various biochemical methods of clinical investigation, including a short description of the different tests of hepatic and renal function. In the section dealing with post-partum hæmorrhage attention is drawn to the value of modern methods of combating shock; an account is given of the technique employed in blood transfusion and also in the preliminary grouping of the donor's blood. There are useful chapters on the treatment of contracted pelvis, injuries and disease of the new-born, and the causes of stillbirth and neonatal death.

On p. 61, where the statement is made "that inability to touch the promontory with the middle finger denotes that the conjugate is normal," no mention is made of the difficulty in palpating the promontory in a generally contracted pelvis. Again, on p. 538, where Watson's method of inducing labour by quinine and pituitary is described, no word of warning is given that the pituitary must be discontinued should labour supervene before the series of injections have been completed.

The book, without being exhaustive, appears to contain all that is necessary for the needs of ordinary practice. It is clearly printed in large type and excellently illustrated by well-executed and original drawings.

PYE'S SURGICAL HANDICRAFT.

Ninth edition. Edited and largely rewritten by W. H. CLAYTON-GREENE, C.B.E., M.B., F.R.C.S. Eng., Surgeon to St. Mary's Hospital; Lecturer on Surgery in the Medical School. Bristol: John Wright and Sons. 1924. Pp. 619. 21*s*.

IF, in the surgery of the present day, there is one thing more striking than the widening of its outlook, it is the decline in handicraft of those who practise it. The very facility with which operations can now be performed under modern conditions of asepsis and anæsthesia have made of less importance the manual dexterity of the surgeon, or rather they have obscured the supreme value which must always attach to perfect

surgical technique. Without that technique it is perfectly true that a surgeon's patients may survive his attack, but they will be deprived of at least half the advantage which the progress of surgical science has rendered available.

The first edition of "Pye's Surgical Handicraft" appeared in 1884, and for 40 years it has held a unique position in surgical literature. To generation after generation of house surgeons it has been a friend in need, and in all its nine editions it has steadily kept abreast of surgical progress. The present volume, edited and largely rewritten by Mr. Clayton-Greene, well maintains the great record of its predecessors. Whilst still keeping the many valuable details to be found in the earlier works it finds room for elaborate and precise directions for the most modern methods of blood transfusion, for the diagnosis and treatment of syphilis, and for innumerable other details which would astonish its first author. No attempt is made to describe every method, but in each instance some well-tried and established technique is described in such detail that it should present no difficulty even to the novice. The series of articles on fractures strike us as being especially good and of particular value to many besides the embryo surgeon. But, indeed, there is scarcely a page in the book from which even the experienced surgeon may not gain some hint towards the perfection of his art. Personally, we should be glad to see the day when surgical handicraft formed a definite and important portion of every qualifying examination. We only wish that chirurgery might have remained more true to the great ideal expressed by Walter Pye in the preface of the first edition of his work, that it had held more closely to its etymology χειρ ἔργον, and that its devotees held in higher regard the pure craftsmanship of their profession.

To every student, unqualified or qualified, young or old, we would most earnestly recommend a careful study of this epitome of his craft.

ANÆMIA: ITS CAUSES AND MODERN TREATMENT.

Second edition. By ARTHUR W. FULLER, M.D. Edin. London: H. K. Lewis and Co., Ltd. 1924. Pp. 138. 6*s*.

THOUGH the title of this book is simple, the subject is a difficult one. It is no small matter to take a common symptom such as anæmia and in the compass of some 120 pages to explain its causes and its treatment. Treatment especially is difficult, for to treat the symptom we must describe the treatment of all the diseases that cause that symptom. For this reason the book cannot be considered in any sense a complete record of what we know of anæmia; it can only be looked on as a pleasant chat on the subject with many useful hints which the wide experience of the writer has taught him. What we believe he has in his mind and wants to tell us is that, where we get difficult indefinite cases, a blood count should be made, for we may get much help from it. The standard he suggests, of blood counts in all cases, will hardly be reached even though it may be recognised that a blood count occasionally gives unexpected and helpful results. It seems a pity to have added an incongruous chapter on neurasthenia to a book otherwise devoted to anæmia.

DISEASES OF THE KIDNEY AND URETER.

Die Chirurgischen Erkrankungen der Nieren und Harnleiter. By Prof. Dr. MAX ZANDEK. Berlin: Julius Springer. 1924. Pp. 254. 12 gold marks.

THIS text-book of diseases of the kidney and ureter gives, on the whole, a straightforward account of such affections, agreeing with generally accepted teaching. It is interesting to note that the author gets good results in certain cases of acute pyelitis by leaving a ureteric catheter in situ, and treats others by decapsulation and scarification of the kidney. He also recommends neosalvarsan on occasion for chronic pyelitis. He advises against the cauterisation of the vesical opening of the ureter to facilitate the passage of ureteric stones, on the grounds that the sphincter at the lower end of the ureter is thereby destroyed and a stricture may supervene.

The book has some defects. There is no mention of the valuable method of reaching the lower ends of the ureters by median sub-umbilical incision. There is also a certain lack of that detailed information which one expects in a treatise on a limited part of surgery. Thus there is no guide given as to how long expectant treatment in ureteric calculus is advisable or justifiable; no rule is laid down as to what degree of delay in the excretion of indigo-carmine is to be regarded as pathological, to mention but two illustrative examples. Omissions of a similar kind would be easy to rectify in subsequent editions, as revision would speedily detect them.

ESSENTIALS OF PRESCRIPTION WRITING.

Third edition, revised. By CARY EGGLESTON, M.D., Assistant Professor of Pharmacology, Cornell University Medical College, New York City. London and Philadelphia: W. B. Saunders Company. 1924. Pp. 146. 7*s*. 6*d*.

THIS is a useful little book, somewhat expensive for its size and contents, and, as is generally the case with American pharmaceutical books, not altogether adapted to English terms and measures. Here its weakness ends; the concise Latin grammar, which explains the recognised prescription terms and structure, is excellent. The construction of the prescription is explained without any of the facts and fancies which betoken the theorist rather than the practising physician, and the conversion of one system of measures to the other is made as simple as possible. Many interesting points are noted with regard to incompatibility and the way drugs should be administered.

JOURNALS.

JOURNAL OF INDUSTRIAL HYGIENE.—In the issue of November, 1924, the question as to whether counter-shock is of use as a method of resuscitation following electrocution is discussed by A. Campbell and L. Hill. They experimented with cats, but found that counter-shock methods proved useless. They conclude that the cause of death in electrocution is ventricular fibrillation, and that the only method of resuscitation which can be usefully employed by a layman is Schäfer's method of artificial respiration.—An investigation into fatigue in the washing departments of steam laundries is reported by M. R. Mayers, who subjected the operatives to careful clinical examination. The work carried out was heavy, for which only the strongest are fit; those with least capacity drop the work and, of course, would not be found employed when the medical inspection took place. Certain definite symptoms of cardiac strain were detected, such as abnormally high blood pressure and pulse-rate, with some cardiac hypertrophy. The signs were least prevalent in laundries of the better type. The author concludes that washing departments of all but the very best laundries are definitely injurious to health, throwing a strain on the vascular system as a whole. She points out that the method of examination employed has general applicability to other industries where muscular work is heavy and the hours are long.—H. M. Vernon and T. Bedford report upon a preliminary investigation of atmospheric conditions in coal-mines. Their observations are based upon kata-thermometer readings taken in the workings at different temperatures and air velocities. They found places where the air was stagnant with conditions adverse to efficiency. The inquiry is one of considerable interest and the need for its

extension is clear; further observations are to be undertaken.—The scheme of medical care for natives on the gold mines of the Witwatersrand is described by L. E. Hertslet. The natives undergo a careful examination before they are engaged, their housing and dietary are under supervision, while medical treatment is supplied when they are sick or sustain accidents. Accurate records are kept; hence the results of the work can be estimated. A fall in the total death-rates from 24·4 in 1913 to 14·5 in 1923 is eloquent testimony to the success achieved; of this gain a fall of 8·8 is due to deaths from disease and 1·1 to deaths from accident. Among the diseases the death-rate from pulmonary tuberculosis has fallen from 3·2 to 1·9, and that from pneumonia from 7·5 to 2·7. The money thus spent in attention to the well-being of the native labour is an economy, as well as a benefit to the natives and the white community.—In the issue of December, 1924, is a monograph dealing with the hygienic significance of nickel which occupies practically the whole of this issue. Its authors are K. R. Drinker, L. T. Fairhall, G. B. Ray, and C. K. Drinker. The first part consists of an exhaustive review of previous work relating to the physiological and toxicological properties of nickel. No such valuable summary has before been published; it includes a bibliography containing 100 references. The main conclusion to be drawn from this review is that nickel as an ingredient of cooking utensils is harmless. The position, however, is far different when nickel gains access to the body in gaseous form as nickel carbonyl, of which there is risk during the manufacture of the metal. This gas is toxic, and fatal cases have occurred. But no such danger is attached to the domestic use of the metal. The second part deals with the detection and estimation of minute amounts of nickel in organic material. Here the authors favour a colorimetric method based on the reaction of nickel with potassium di-thio-oxalate, which they consider can be used with greater facility and accuracy than older methods described in literature. The third part consists of observations on the elimination of nickel ingested with food cooked in nickel containers. Three families were observed whose kitchens were equipped throughout with nickel utensils, so that all cooking and food handling was done with nickel. The experiment lasted for three months. The nickel was corroded to some degree during the cooking operations, but probably less than would have been the case with tin or aluminium. The metal was detected in the urine of those observed, but the amount was too low to be a possible source of kidney damage. No symptoms of any kind resulted.

Reports and Analytical Records.

"VULPRO" WATERPROOF SHEETING.

(MANUFACTURED BY VULTEX PRODUCTS, LTD., GENERAL BUILDINGS, ALDWYCH, LONDON, W.C. 2.)

THIS is a sheeting of a fine texture, dull cream in colour and coated with a preparation containing rubber. It weighs 20 g. per square foot, which is equivalent to 6¼ oz. per square yard. Portions were submitted to the following tests and then compared with the original material:—

	Result.
Dry heat at 100° C.	No change.
Steam heat at 100° C.	,,
Boiling with soap and sodium carbonate ..	Fabric not quite so plastic.
Contact with fæces and urine for 24 hours at blood heat	No change.
Contact with lysol	,,

These results may be regarded as very satisfactory. A microscopical examination showed that the fabric was evenly woven and uniformly covered with the waterproofing medium. The material itself is waterproof. Its lightness and its tendency not to form creases, with consequent cracking when folded, render this sheeting well adapted for a variety of purposes.

SACRATINTA (SACRAMENTAL WINE).

(SACRATINTA, LTD., 20, SUFFOLK-STREET, PALL MALL, S.W. 1.)

When this wine was analysed the following results were obtained:—

Alcohol by volume	15·56 per cent.
Total solids extractives, not including mineral matter	21·6 ,, ,,
Ash	0·5 ,, ,,
Total acidity as tartaric acid ..	0·6 ,, ,,
Volatile acidity as acetic acid ..	0·08 ,, ,,
Sugar	20·5 ,, ,,

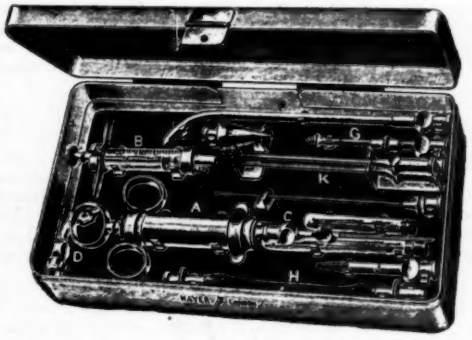
The preservatives sulphites, borates, salicylates, and formalin were tested for, but found to be absent.

This is a wine of a full-bodied and sweet character, and is no doubt well adapted for its somewhat special requirements. The analysis is in fairly close accord with one we made formerly (THE LANCET, March 28th, 1908).

New Inventions.

A COMBINED UROLOGICAL SYRINGE.

THE apparatus shown in the illustration consists of a 10 c.cm. metal syringe and a 2 c.cm. glass Record syringe. The nozzle of each has a cone-joint with external bayonet fitting to which any of the accessories can be attached. If required, a 10 c.cm. glass Record syringe can also be supplied. (C) and (D) are straight and curved adaptors for fitting interchangeable needles. The syringe can then be used for local



anæsthesia or for accurate hypodermic, intramuscular, and intravenous injections. (E) is a nozzle for injecting the anterior urethra and (F) a small metal catheter for injecting the posterior urethra. (G) is employed for injecting fluids through the ureteral catheter into the pelvis of the kidney. When attached to the syringe this is carried out by manual pressure. But for those who prefer to do this by gravity, the part (H), consisting of two metal ends connected by a variable length of rubber tubing, is supplied. The piston of the syringe being removed, the barrel of the syringe is used as a burette. One end of (H) being attached to the nozzle of the barrel, the other to the part (G), by varying the length of the tubing the barrel may be placed at any desired height. (K) consists of two spinal needles and a cannula. It can be used for lumbar puncture, and for spinal anæsthesia by attaching the syringe (B) to the cannula. (J) is used for the instillation of some fluid into the bladder after the completion of a cystoscopy. Such a syringe can be used for urethral injections, instillations into the bladder, pyelography, intravenous and hypodermic injections, and local and spinal anæs-

thesia. It has been designed largely for urological work, but with slight modification it can be adapted to any branch of surgery. All the parts can be boiled. It is of the greatest importance to have accurately-fitting joints, and the best workmanship is essential. The initial cost is somewhat high for a syringe, but, as only one syringe will be required, it means in the end a great saving. Since it will be in more or less constant use, it is not put aside and forgotten until the parts have become rusty and out of action. There is also the advantage that all the parts are in one box; and the surgeon should never find himself in the position of being without an important syringe when operating away from home.

The apparatus has been made for me by Messrs. Mayer and Phelps, Chiron House, New Cavendish-street, London, W.

Cardiff. T. E. HAMMOND, F.R.C.S. Eng.

SIR JAMES MACKENZIE:
THE LATER PHASES OF HIS WORK.

By R. MCNAIR WILSON, M.D.

THE wider significance of Mackenzie's work, as is indicated in the memoir published in THE LANCET last week, may not yet have found full expression. His ideas were very simple and thus were apt to be overlooked. His fundamental departure from previous teaching lay not in the realm of cardiology but in that of physiology. It may perhaps be expressed by means of an illustration, dangerous as this method admittedly is. "Suppose," he once said to the writer, "that a man struck you a blow, two things might happen: (1) you might fall down unconscious or dead, (2) you might, on receiving the blow, react to it and fight the aggressor. In the first instance the 'symptoms' presented would be slowing of the pulse, pallor, and unconsciousness, complete muscular weakness, and so forth; in the second instance they would be quickened pulse, flushing, increased acuity of the wits, and increased muscular weakness. Both sets of symptoms may be described as arising from the same *cause*. But such a description is misleading. *The truth is that the blow has produced in both cases the same effects.* It has slowed the heart, emptied the cutaneous vessels, weakened the muscles. But, whereas in the first instance reaction has not occurred to these effects—which thus remain evident, in the second case reaction has occurred instantaneously and the whole clinical picture is changed."

It appeared to Mackenzie to follow from this that stimuli are lethal in their essence, and that, were the body bereft of the power of reaction, every stimulus—light, sound, tactile stimuli, and so forth—would necessarily cause death. The heart would "stand still" as a result of any of them. Thus he was led to investigate the nature and meaning of reaction as the real key to symptomatology—this word, reaction, being used in a special sense. For example, a quick pulse may be an expression of reaction to a cause primarily tending to slow down or stop the heart.

He saw that stimuli—the "blows" of life—must determine the degree and nature of the reactions made to them. Thus any circumstances increasing the strength or effectiveness of stimuli must render necessary more active reactions in response to them. This conception led him to include in his survey the organs of special sense—the receptors of stimuli of all sorts, the organs of transmission—the nervous system generally, and finally the organs receiving the stimuli—the heart, liver, stomach, muscles, and so forth. For example, if a stimulus, a slap, is applied to the uninjured skin the response or reaction may be no more than a slight quickening of the pulse; but if the same slap is given to an area of skin rendered hyperæsthetic by injury, the response may be violent with great cardiac acceleration and muscular activity. Thus the condition of the special senses has a most important bearing on the heart's action and responses The child sickening for measles, with photophobia is intensely sensitive to light and may develop a very rapid pulse as a consequence of exposure to it. The same light would not influence the cardiac rate in the same child when well. Further—and Mackenzie never lost sight of this fact—a high degree of sensory excitability may so exaggerate a stimulus as to make reaction impossible altogether. Thus a slap on a raw area of the skin may result in the immediate "fainting" of the recipient with strong cardiac inhibition, muscular weakness, and so forth.

Consequently the condition of the sense organs must, he saw, have an important bearing on every case of functional cardiac trouble, and indeed of functional trouble of any organ.

Exactly the same reasoning was applied to the nervous system, which conducts the stimuli to the organs. Drugs and toxins acting on the nerves or centres modify the nature of stimuli passing along or through these. The alcoholic is a case in point; another case is the victim of a toxæmia. Such modified stimuli demand different kinds of reactions or responses from normal stimuli, and so give rise to different kinds of "symptoms." Thus a symptom is a modified reaction, and from a study of it the nature of the modification may be inferred.

It will be seen that this view was widely different from that of the specialist whose interest centres in the heart muscle, in valves, or even in the cardiac innervation. Organic disease, indeed, seemed to Mackenzie, in his later years, to be a relatively small matter; one, merely, of many possible reasons why reaction was changed or rendered excessive or incomplete or prevented altogether.

His study of stimulation and of stimuli and of the reactions made to them brought him, in the last year of his life, to ask himself the question: What is the nature of the impulse which flows along the nerves to the organs and evokes their responses? Prolonged meditation and observation led him to think that it must differ widely from any of the electrical stimuli used by experimental workers to imitate or replace it. For these electrical stimuli produce, as is known, "all or nothing" responses in organs, whereas the natural impulses produced graded responses of an almost infinite variety. He, therefore, postulated a "vital force"—returning, in this, to an old and apparently discredited view—and began an attack on the very fundamentals of experimental physiology.

It would be idle to pretend that physiologists took him seriously or that even his own disciples were ready to agree with him. His challenge, however, had a substantial foundation and will be assuredly taken up.

Mackenzie changed his views about heart disease and disease generally as new knowledge came to him. Ten years ago he spoke always about the myocardium, which he regarded then as the key to the study of heart affections. His early work on arrhythmias was interpreted by him from this point of view. In his last years the myocardium had become for him but a factor in the general process of reaction. His interest had left the heart and was centred in the much larger question of the reception and conduction of stimuli and the organic responses made to them. Great numbers of other workers cultivated the field of his early pioneering activities and reaped a harvest of results—the discovery and identification of auricular fibrillation by Sir Thomas Lewis is a case in point. But these researches in no sense invalidated any of Mackenzie's discoveries. They merely fulfilled them. On his last great enterprise, which again arose naturally out of his first labour, he journeyed practically alone. The academic—using that word in no unkind sense—simply did not know what he was talking about, and often frankly told him so. Again and again he was advised to confine himself to his "own subject." He expected this and was never dismayed by it. General practitioners, on the other hand, usually understood him at once because their daily problems were presented to them in a new light.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 7, 1925.

MEDICINE IN PARLIAMENT.

THE House of Commons meets again after the Christmas adjournment on Feb. 10th, to begin the duties of a session which may be an unusually calm one, but which may be speedily interrupted by certain waves of political feeling which have already appeared on the surface. In this House of Commons there will sit as large a number of qualified medical men as have ever sat there, and they represent various shades of political thought, being drawn from all parts of the British Isles and from all ranks of medicine, professional, official, and academic. They will, therefore, be recognised in the House of Commons, as they should be, not merely as standing for a sectional interest, but as able and willing to speak from knowledge and experience on the wide issues of public and personal health, in which an increasing number of their colleagues are taking interest. And some of these issues should speedily come to the front, so that the faces of the medical Members should shortly be familiar to Mr. Speaker, who has always recognised with great courtesy the right of the representatives of medical science to take part in discussion involving medical matters. We print on another page the portraits of these representatives.

We commend now to the consideration of medical Members of the House of Commons the need for early action in regard to the sale of patent medicines. Such action is in the best interest of the community, and will be dictated by no narrow professionalism. Unless something is done to stem the continued supply of remedies which are no remedies, boosted by assertions which have no basis in fact, it will be difficult for any scientific measure dealing with health, whether of public or personal application, to have its fair and right effect. The evil is perfectly well recognised: only the most regrettable chance prevented an appropriate sequel to the Report of the Select Committee on Patent Remedies, which was rendered in 1914, and there is no need whatever to go over the whole ground again of inquiry, for convictions which were then reached remain unchanged or have been more widely confirmed. One little measure, favoured by everybody, ought to pass the quicker. The Therapeutic Substances Bill, which seeks to standardise the quality of vaccines, serums, and other substances such as salvarsan, insulin, and pituitary, by regulating the manufacture and sale of them under licence, has since been introduced in the House of Lords where it was given a third reading. At present stuff which the United States or France or Denmark rejects as not good enough for them is good enough to be dumped on us. And other legislative measures which should fairly command attention came up at the important interview between the Minister of Health and an influential deputation from the Peoples' League of Health on Jan. 27th. This deputation was the aftermath of an International Health Conference held in May of last year at the Wembley Exhibition, when two sessions were devoted to the consideration of legislative reform with regard to health matters, and a series of resolutions were moved.[1] Mr. NEVILLE CHAMBERLAIN assured the deputation that he was prepared to accept generally the recommendations of the Food Preservatives Committee, which would shortly be circulated in draft. He was proposing to consolidate the existing legislation as to food and drugs, but in the meantime to carry out many recommendations which could be done without delay. A day or two ago, in reply to a deputation from the London Chamber of Commerce, which suggested that no evidence had been produced to show any actual prejudice to public health from preservatives in food, Mr. NEVILLE CHAMBERLAIN insisted on the possibly cumulative effect of consuming many kinds of food containing preservatives, and the important fact that some sections of the trade were now getting along without preservatives at all. He foreshadowed an amending Public Health Bill which would give local authorities much needed powers to remove tuberculous cases which were proving centres of infection, especially to children. Most important of all, he stated the Government's intention to reform the Poor-law as soon as possible. The delay in dealing drastically with the available hospital bed supply of the country has paralysed largely the abundant efforts made by so many parties to render hospital treatment available and effective to the whole of the community.

These matters are so far-reaching that in comparison with them many important proposals may have to wait; but these other measures should not be lost sight of. An agreed Bill was available last session so to modify death certification that no registration of death should take place unless and until the registrar has received a medical certificate, first of the fact of death, and secondly of the cause of death. The Factories Bill, which was read a first time last Parliament, to consolidate and amend enactments relating to factories, contained much that was needful in order to bring the factory life within the purview of the public health system in the country. The new knowledge of ventilating and lighting principles must in fairness be applied to all sections of the industrial population, not excepting those who are doing clerical work. No doubt the Bill as it stands will be represented as a crushing handicap on struggling manufacturers, and to obtain any measure of consolidation it may be necessary to compromise over cubic air-space. No medical man or woman, least of all those who are actually in Parliament, will imagine that legislative changes are going to have a great effect unless the people of the country are roused to a sense of the importance of obeying the laws of hygiene. A commendation made at the Wembley Health Conference by Miss MARGARET BONDFIELD, then a Member of the Labour Government, remains valid, that voluntary workers who have the time to talk about health matters can render great service by removing the issues from the area of crankdom. And this should be all the easier now that there is a clear vista of possible health legislation in the immediate future. Those who represent medicine in Parliament can deal worthily with the great responsibilities likely to fall upon them, and their views will be appreciated by the House of Commons.

[1] Report of the First International Health Conference, The People's League of Health Headquarters, 12, Stratford-place, London, W. 1. Pp. 240.

PROGNOSIS IN CHRONIC DISEASE.

IT IS a curious fact in practical medicine that the doctor is valued by the laity as much for his power of prophecy as for his skill in healing. A sick man wants to be well, but he wants as much or more to know whether he is going to get well or not. In acute illness the doctor's great function is to assume the responsibility, in normal circumstances belonging to the patient, for deciding the course of life, and the nurse's part is to take responsibility for ordering its minute details, while the patient's share is to yield all his will to these guardians and be "a good patient." In chronic sickness the patient asks for assurance about what is to come almost as much as for immediate relief; here in particular he needs someone else to take the burden of his future. With the progress of hygiene and good living the proportion of creaking doors in the population has much increased; instead of dying by the means which are "natural" when his tissues begin to decay, modern man is disappointed if he cannot live twice as long as his primeval ancestors. Add to this the rise in the demanded standard of "feeling well," which has naturally followed the general increase in healthiness, and it is easy to understand why the patient is so anxious to know whether he will get well, and if not when may he expect to die; and if the answer is that he may anticipate a partial restoration to health, how well he may expect to be and when.

As Dr. M. O. RAVEN points out on another page, in acute and subacute diseases, where the whole history is easily grasped in one view, prognosis is relatively simple and has reached a standard which is for the moment not unsatisfactory; and whether the outlook is good or bad its comparative certainty alleviates much human misery. The certainty of death in inoperable cancer is in its way as helpful a piece of knowledge as the certainty of recovery in chicken-pox, and the wretchedness of a migraine or an acute lumbago would certainly not be taken in the light-hearted way in which they are commonly received, were the sufferers not fully assured from their own or their friends' experience that a few hours or days would see an end of their pain and be succeeded by a period of almost certain immunity from another attack. But in a great number of disease processes, often very ill-defined in their early stages, prognosis remains more dubious and speculative than it should be. As consequential events become more widely separated in time, so it becomes more and more difficult for the human mind to apprehend that there is a connexion between them. Man has long since passed the stage when he discovered that the sowing of a seed was causally related to the springing of a plant, but there are still considerable difficulties in viewing the facts of 20 or 30 years of slight and slowly progressing ill-health as a whole; the past is dim and not very clearly remembered, the best of notes cannot be complete, and a host of similar processes have intervened and obscured the view. Patients move about and change their doctors, and our centres of medical research have the most inadequate methods for finding out what ultimately happens to the patients who pass through the wards; and here it may be interjected the follow-up systems of some American hospitals deserve study, for it is surely possible to reach, for other diseases, some of the success which has accompanied the organised attention paid to tuberculosis. Administrative exigencies seem to have wiped out the high hopes which were entertained of the knowledge which would come from the history of war pensioners. At the moment everyone will be thinking of the shining example set by JAMES MACKENZIE; that there is a fruitful road which can be travelled he showed plainly enough, but there is no doubt that it is a rough path and requires grit and genius, if it is to be pursued to any definite end.

If, then, there are singularly few facts on which the prognosis of chronic disease can be based, are there any general principles which may be helpful till more definite data are available? Dr. RAVEN indicates one which seems to rest on a good basis. Disease is a process, not a state, and it must therefore progress in one direction or another. The natural history of the acute infectious diseases is so well known that, in defiance of Mr. YULE, a typical course for the rise, fastigium and decline of each of them is defined in the text-books; something is happening all the time. Of thoroughly chronic diseases we can think of two kinds, one in which degenerative processes begin slowly and more or less steadily progress till the economy can no longer compensate for its defects, the other in which with a relatively sudden onset a substantial degree of illness is reached which proceeds slowly and gradually to complete or partial cure. The rules which summarise the history of these cases are no doubt discoverable; and are possibly as precise as those which enable prognosis of acute conditions to be as good as it is. And it seems more or less obvious that the whole duration of the processes must be proportional to the rates at which they are proceeding at any time. What the proportion is we do not know, for we do not know the rules which these rates of change follow. The progressive destruction of the liver in cirrhosis may likely be expressed graphically by a straight line with some deviation due to compensatory over-growth; the healing of a periostitis more probably follows a logarithmic curve, rapid at first and becoming slower and slower as the restoration to normal is approached. But it seems evident that for a first trial a measurement of the time in which a just perceptible change takes place gives some sort of gauge of the time which will be occupied by the whole. In any case the establishment of the fact of change indicates active advance or retreat, as was elegantly illustrated by DREYER when he pointed out that variations from day to day in the agglutinin titre of the blood would distinguish a genuine case of enteric infection from some similar pyrexia in a man who, in consequence of antityphoid inoculation, gave a positive Widal test but without any material changes in titre over a week or more. Similarly, the absence of perceptible change over a period of months or years must signify that for practical purposes the advance or retrogression of the process has gone as far as it means to. It seems as if it is along some such lines as these that data could be obtained from which the mathematicians might ultimately tell us how chronic disease goes along. But it is no simple matter.

THE TREATMENT OF PULPLESS TEETH.

TECHNIQUE in treating pulpless teeth, though primarily the concern of the dental profession, is also of interest to the medical practitioner, who may be witness of the infection supervening on dental treatment. The broader aspect of pulpless teeth and their possible relation to systemic infection was touched on incidentally only in the interesting paper read by Mr. L. E. CLAREMONT before the Odontological Section of the Royal Society of Medicine on Jan. 26th. Both Mr. CLAREMONT and those who joined in the discussion took up the attitude that while the treatment of pulpless teeth is not always satisfactory, yet there is no valid reason for refusing to treat such teeth under suitable conditions and within definite limitations. The fact that focal infection has assumed so important a place in modern medicine has placed a heavy responsibility on the dentist, but it has not laid an embargo on his treatment of pulpless teeth to the extent of making it a pathological offence to conserve teeth which have no longer a vital pulp. Even taking at its highest value all that has been said in condemnation of dental infection, it is legitimate and, indeed, desirable that the dentist should save rather than extract teeth. But conservation must be attempted after careful consideration of many factors, and should imply a standard of technique which is often lacking at present.

The pulpless tooth may be considered from two points of view. There is the tooth in which the progress of caries has led to an exposure of the pulp. Here treatment involves the extirpation of the pulp and filling the root canal. Secondly, there is the tooth in which the pulp has died as a result of inflammation, and an infected and septic condition of the pulp-root canals has been established, often extending beyond the apex of the tooth into the peri-apical tissue. With regard to the first class, the fact that the pulp is still vital does not of necessity imply that it is free from bacterial contamination, for, as Mr. J. G. TURNER in this country, and HENRICI and HARTZELL in America, have shown, even the pulps of teeth free from caries may contain bacteria. Yet there is every reason to think that any infection is only superficial and has not penetrated into the dentine lining the root canal or beyond the apex. Provided that an adequate technique is employed there is every reason to believe that the pulp can be removed and the canal filled in a way to render it free from infection and reasonably immune to subsequent bacterial invasion. Unfortunately, clinical experience shows that in a certain number of cases infection follows, and may result either in an acute abscess or more commonly in a chronic infection leading to a painless apical rarefaction which may only be discovered if the teeth are radiographed. There are no statistics to show how often this occurs; all that can be said is that it is not uncommon. Although infection via the blood-stream is a possibility, it is much more likely that it is introduced by the operator in the process of extirpating the pulp and filling the root. A knowledge of what may be regarded as the average root canal technique bears out this hypothesis. Indeed, it is not too much to say that it is surprising that infection does not occur more frequently. This sounds like a severe indictment of dental technique, but it does not overstate the case. Aseptic dentistry is an impossibility for many reasons, but a greater degree of antiseptic dentistry is undoubtedly possible. Mr. CLAREMONT outlined a careful method of treating devitalised teeth which though not absolutely proof against failure, would certainly make it much less common. There is no doubt, however, that the standard of root canal treatment has progressively improved during the last decade, and that an increasing number of dentists are adopting methods which are deliberately planned so as to exclude infection during the stages of root canal treatment. In this matter dentistry is much indebted to Mr. J. B. PARFITT, who has elaborated a method which is logical and thorough, and yet not so exacting as to place it without the scope of the usual conditions under which dentistry is performed. In spite of a certain number of failures, many of which could undoubtedly be prevented by a more scientific technique, there seems no reason to adopt the pessimistic attitude of some who argue that it is unwise to retain in the mouth any tooth which has not a living pulp. A dentist who is aware of the potential dangers of an infected tooth and shapes his treatment accordingly so as to exclude avoidable infection, during the process of treatment, is justified in treating and saving teeth with exposed pulps. It would be a wise precaution, however, to have the teeth radiographed periodically to provide against the contingency of apical infection later, for a pulpless tooth is undoubtedly less resistant than a vital tooth.

The problem of the tooth already pulpless and with infected canals is much more difficult, and there is more to be said for the attitude of those who are so impressed by the difficulties of sterilising the peri-apical tissues that they do not consider it justifiable to subject their patients to the risk of leaving infection behind, the more especially as it is usually painless and may, therefore, give no local signs of its presence. Mr. CLAREMONT took up a guarded attitude on this subject. Provided that certain essential conditions were fulfilled, he thought that it was legitimate to undertake the treatment of such teeth, and that it was often possible to do so with success. Treatment is most likely to be successful on the anterior teeth with single roots. It should only be attempted on teeth which have healthy periodontal membranes and do not show any signs of marked apical infection. A radiograph should precede treatment, and the teeth when filled should be regarded as being on probation and examined at intervals, and, if possible, radiographed. The ideal treatment should logically include cultures from the root canal to ascertain when they were free from infection. Mr. E. C. SPRAWSON, in the discussion which followed, stated that this step is being introduced at the London Hospital Dental School as a routine procedure. This is an admirable innovation, the educational value of which to the student should be considerable. As a practical addition to private practice it is scarcely feasible, for it would add so much to the cost and length of treatment as to make it prohibitive except to a favoured few. It was noteworthy that though the discussion revealed a wide variety of methods of attempting disinfection of septic root canals, there was a very general endorsement of Mr. CLAREMONT'S moderate attitude, that though the treatment of infected teeth presents great difficulties and places a great responsibility on the dentist who undertakes it, yet there are cases in which treatment is fully justified and is often completely successful as judged by both clinical and radiographic tests. Indeed, even the presence of apical rarefaction may not be a barrier to successful treatment, for bone regeneration is possible, as was shown by some excellent radiographs exhibited by Mr. CLAREMONT.

To put it shortly: the forceps is not the only way of treating dental sepsis. In many cases extraction is the only possible remedy, but in others it is possible to remove the infection and still leave to the patient the use of his teeth. The amount of attention which is being paid to this aspect of dental surgery leads us to hope that the conservative treatment of dental infection will become increasingly successful.

INDEX TO "THE LANCET," VOL. II., 1924.

THE Index and Title-page to Vol. II., 1924, which was completed with the issue of Dec. 27th, will shortly be published. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W.C. 2.

Annotations.

"Ne quid nimis."

THE HUMAN PEDIGREE.[1]

DURING the week a new edition has appeared of Sir Arthur Keith's famous book surveying the story of man's pedigree from an infinitely past date as evidence in support of the theories comes up and receives confirmation. The book first appeared ten years ago, and in spite of the fact that at that time the whole world was convulsed with the efforts of modern men to destroy each other, there was a wide recognition that knowledge of the material which was being disintegrated by thousands had the deepest interest for all. In its first form four editions were issued, so that the work has been duly reviewed in these columns; but the latest impression is practically a new book so much has it been revised and enlarged, while during the interval of a decade much has happened which necessitated recasting of material, and, as the author frankly allows, modification or change of opinion. Discoveries have been made in this country, in France and Germany, in the United States, Australia, and Java, and notably in South Africa, which compel an alteration of judgment in regard to many general conceptions, and notably in the estimates of geological time. Again, the popular view of racial emigration has to be altered in view of the belief that such movements played only a minor part in shaping human evolution. Prof. Keith believes that the distribution of modern human racial types, as seen at the dawn of history, cannot be accounted for unless we presume that they have been evolved in or near the regions of the earth which they now occupy or even occupied at the beginning of time, although, with his enormous range of knowledge, we may be certain that he would not disregard evidence which in particular cases cut across the generalisation. In these volumes attention is focused on the prehistoric sites in turn, which means that evidence is examined in series and matters are discussed more or less as they come up for consideration; but a full and explicit index will give the careful reader an opportunity for a systematic examination of the facts and a comprehension of the broad conclusions. A vast amount of detailed information is contained in every chapter, and the clear presentation is well illustrated by the sections which deal with the discovery of the Piltdown skull, and which explain how far fossil fragments can yield reliable evidence in respect of man's evolutionary history. The author half apologises for introducing what he describes as dry technicalities concerning the Piltdown skull, but no chapter better exemplifies than this one the labour, the accuracy, and the conscientiousness which have gone to the making of the big treatise. In this brief notice it is only intended to advise our readers of the intellectual treat which has been provided for them.

RELAPSE IN WASSERMANN REACTION AFTER TREATMENT.

THE failure of mercurial continuation treatment to keep a negative Wassermann negative in syphilitic out-patients has recently been noted by Prof. Ernest Glynn, Dr. R. E. Roberts, and Dr. Phœbe Bigland. Working in connexion with Dr. F. P. Wilson's clinic at the Royal Infirmary they studied the Wassermann relapse incidence in 503 patients whose reaction was negative after the standard admission course of six doses of salvarsan and eight of intramuscular grey oils, and communicated the results to a pathological meeting held at the Liverpool Medical Institution on Jan. 15th. About two-thirds of the 503 patients received continuation courses of either grey oil or mercury tablets—the latter usually prescribed to sailors or other "wanderers"—to keep their W.R. negative. About one-third received no treatment for a few or many months, because of irregular attendance. The authors were therefore able to compare the Wassermann relapse incidence in the three groups. The patients were classified into five periods dating from the beginning of their negative W.R., viz.: 0–6 months, 503 patients; 7–12 months, 382 patients; 13–24 months, 264 patients; 25–36 months, 100 patients; 37–48 months, 27 patients. There were 185 "first" Wassermann relapses among these; six cases of reinfection were excluded. The Wassermann relapses were classified into complete and partial, the technique being No. 4 M.R.C. report. The authors expected to find that patients receiving no treatment relapsed more frequently than those treated. But exactly the opposite occurred, as shown by the following examples:—

Examples of Partial (P.) and Complete (C.) Wassermann Relapse Incidence in 503 Patients.

Period in months.	No treatment.		Grey oil.		Mercury tablet.	
	P.	C.	P.	C.	P.	C.
0–6 and 7–12 combined	9·5	13	28·2	20·3	15·6	13·0
13–24	6·6	9·2	No cases.		12·5	7·8

One hundred and nine of the 185 patients with the "first" Wassermann relapse became negative again on further treatment—usually with salvarsan and grey oil. They were classified in the same manner. Thirty-five relapsed a second time, and in general the incidence of the second relapses in the three groups was the same as that in the first relapses. In both series complete and partial relapses were more frequent after grey oil than after mercury tablets. These unexpected results were not due to the influence either of (*a*) selection by clinicians; (*b*) Wassermann on admission; (*c*) the "delay period"—viz., time elapsing between original infection and patient's arrival at clinic; (*d*) occasional deviations from standard continuation treatment or other variable factors. P. Fildes and R. J. G. Parnell, unknown to the authors, had independently come to a similar conclusion in 1919 on the failure of mercurial continuation treatment after salvarsan by the study of the Wassermann relapse in 129 syphilitic patients at Haslar; while Sir Patrick Watson, of Edinburgh, 40 years ago did not advise the administration of mercury to prevent the occurrence of the manifestations of syphilis at a later date.

The various factors which might account for these unexpected results were next considered by the collaborators. They held that it was wrong to assume that because mercury is often beneficial in treating active syphilis with a positive W.R., therefore it must be beneficial in latent syphilis with a negative W.R. The pathological conditions were absolutely different. Evidence was produced that the increased Wassermann relapse incidence after mercury might be partly explained by the development of mercury-resistant spirochætes, sometimes by a provocative reaction, but chiefly, as the statistics suggested, by a lowering of the patient's immunity. This last was more likely to occur if the mercurial continuation courses began, as usually happened, about six to eight weeks after the end of the admission course of salvarsan and grey oil, from which it sometimes took the liver six months to recover. Evidence was next produced that the Wassermann relapses were injurious, partly because the complete relapses were associated with clinical relapses in 6·7 per cent. of the "no treatment" cases, in 9 per cent. of the mercury tablet cases, and in 16·9 per cent. of the grey oil cases. In order to try to prevent the occurrence of Wassermann relapses, it was advised that two or possibly three continuation courses of salvarsan

[1] The Antiquity of Man. Revised edition. By Sir Arthur Keith, M.D., F.R.S. London: Williams and Norgate, Ltd. 1925. Two volumes. With 266 illustrations. Pp. 753. 25s.

should be given during the two years, controlled, if necessary, by the Van den Berg lævulose tolerance and other tests, the first being given about six months after the admission course. The dormant, but inaccessible spirochætes were more likely to be finally destroyed by the intensive administration of this powerful remedy than by the prolonged courses of mercury, a drug now recognised as much less efficient in the treatment of active syphilis.

TAPE-WORMS AND FLUKES IN EGYPT.

MANY fundamental discoveries in tropical disease, more particularly concerning the life-histories of intestinal parasites which afflict man in Egypt, have emanated from Cairo during the past century. The classical investigations of Looss on *Ankylostoma duodenale* and of Leiper on the schistosomes are still fresh in our memory, and now Dr. M. Khalil, a distinguished pupil of the last-named investigator and a student of the London School of Hygiene and Tropical Medicine, has summarised[1] the recent progress of anthelmintic work in Egypt, for which he himself appears to have supplied the stimulus. Up to 1913 no united efforts had been made to check or treat ankylostome or schistosome infections in Egypt. Ankylostomiasis has probably been endemic in that country since the earliest times, but it was not till 1847 that the infecting worms themselves were discovered in Cairo by Pruner. Recent improvements in the therapeutics of ankylostomiasis, culminating in the discovery of carbon tetrachloride as an anthelmintic, have made it possible to subject the population to "mass treatment" on an extensive scale.

Schistosomiasis, too, has been indigenous in Egypt from the dawn of history, for the eggs of these parasites have been demonstrated in the tissues of ancient Egyptian mummies. The trematodes themselves were discovered by Bilharz in 1852 and their curious life-history was already suspected by Sonsino, who dissected large numbers of the intermediate hosts, fresh-water snails, the elucidation of this problem being finally effected by Leiper in 1915. The world is indebted to Christopherson for the tartar emetic treatment of schistosomiasis which he introduced in 1917 and which is now being used with great effect in Egypt, and it is with this aspect of the subject that a section of Dr. Khalil's report is concerned. We learn that the number of intravenous antimony injections given during a day by a single medical officer sometimes exceeds 400, and so skilled do they become that 150 patients may be injected within an hour. The prosecution of a vigorous ankylostomiasis and schistosomiasis campaign is carried out by the organisation of special camps, or annexes, composed of tents and wooden huts where large numbers of patients are received for examination and treatment. Educational measures are regarded as of special importance, popular propaganda amongst the villagers being carried out by means of leaflets, educational lectures, and particularly by sensational posters. For the prophylaxis of these diseases the coöperation of religious teachers is sought, directed especially against the pollution of water-courses which is an offence condemned by the sayings of the Prophet; village latrines are being established, and the diseases themselves stamped out by mass treatment.

The attempt to exterminate the fresh-water snails may well be successful, for the system of irrigation in Egypt lends itself, during the summer rotation, to the drying up of the smaller irrigation channels where the mollusca soon die when exposed to the sun, while the small amount of water left in the deeper channels can be treated with copper sulphate, which appears to be lethal to these creatures, even in a dilution of 1 : 4,000,000. The report also includes an interesting survey of parasitic infections of a single Egyptian village in the Delta; the intensity of parasitism may be judged from a photograph of a fellaheen boy holding a board on which are pinned 81 mature ascaris worms expelled after one dose of 3 gr. of santonin. The report, which is extremely well written, concludes with the description of a new trematode parasite of the rat—*Echinostoma aegyptiacum*—by Khalil and Abaza, and an investigation on the complement-fixation reaction in bilharziasis using an extract of *Fasciola hepatica* as antigen, by A. T. Shousha, who finds that the serum of bilharziasis patients give a positive reaction in 67·6 per cent.

[1] Ankylostomiasis and Bilharziasis in Egypt. Ministry of the Interior, Egypt, Department of Public Health. Reports of the Public Health Laboratories. No. 6. Government Press, Cairo. 1924. Pp. 196. Price P.T.30.

SOME PROBLEMS OF HOSPITAL ADMINISTRATION.

A RECENT number of *The Modern Hospital* (December, 1924) contains an article on Some Fundamental Problems in Hospital Administration, by Dr. E. M. Bluestone, assistant director of the Mount Sinai Hospital, New York, which is calculated to produce hard thinking on the part of those engaged in hospital practice and hospital administration. The writer suggests that many physician-superintendents visualise hospital administration in terms of hotel management, and the larger the hospital the more likely is the necessary differentiation and division of labour to produce this result. A comparison of British and American methods might lead to instructive lessons. The position of a medical superintendent in American hospitals differs in many respects from his position in this country, and even here there is a wide divergence of method—our teaching hospitals for instance, have not the same highly-organised medical administration centred in one person as have our State mental hospitals or Poor-law institutions. But when allowance is made for these differences there is much that is common to all hospital administration wherever it is found. The fear that "paper work," as Dr. Bluestone terms business organisation, may overshadow the clinical aspects of medicine is a real one. Statistical inquiries into everything which concerns the hospital and the patient become more elaborate every year, and inasmuch as the staff cannot, for financial reasons, be correspondingly increased, most hospital officers find themselves involved in a large amount of clerical work. It is difficult to see how this can be avoided in dealing with a system which is continually increasing in complexity, but it is none the less clear that we shall have to be very much on our guard if the human aspect is to be retained. Nothing is easier than a perfunctory filling in of forms and compilation of figures, and generally speaking, each additional form added on to the organisation means that the patient himself gets less attention. Physicians who have to deal with State-aided patients in the tuberculosis departments of hospitals, for instance, know well how real this danger is.

There is, moreover, the ever-present difficulty that the patient is apt to lose his identity and become merely a case, occupying a bed with a number. Dr. Bluestone deals with a firm hand with all examples of this failure to realise that the patient is a sick person and not an inanimate case. He cites as examples from his own personal observation in American hospitals the list of tonsil operations which have to be worked through and are done at times in a perfunctory manner, the difficulty of maintaining interest in the so-called chronic cases in which there is no question of differential diagnosis or hope of treatment, the unnecessary clinical manipulations for purely demonstration purposes, the preparation of patients for the weekly operation list when they are not likely to be dealt with, the discussion of details of illness, especially regarding hopeless prognosis, in the presence of the patient, and lastly short cuts which save time but not the patient's feelings, or which increase operation risks. In all this Dr. Bluestone is at pains to point out that he has no intention of

belittling the work of science which has written so many bright pages in the history of mankind, but that he is anxious rather, as an administrator, to keep the human side of medicine always to the front. He pleads for less of the cold emphasis on quantity production and for a broader interpretation of hospital service, and in conclusion he raises the question whether we are right in herding the sick together in such large institutions. In this last matter he seems to have touched upon a very real and serious question in hospital administration. It is true that a small hospital must have high over-head charges, but it is equally true that a very large hospital may over-emphasise quantity production in the administrator's office, and eliminate the human factor still further.

POSTURE AND REST.

THE distinctive feature of modern industrial practice is the elimination, so far as it can be effected, of heavy manual labour. Great advantage to health and the economics of production comes therefrom. Nevertheless, the time is distant when recourse to human physical effort will be abandoned; it still holds, and must continue to hold, an important place in industries. While, however, much scientific attention has been directed to the laws which govern the use of mechanical power, curiously little thought has been expended on the best methods of employing human power. The latest report[1] of the Industrial Fatigue Research Board is an effort in this direction; it deals with the effects of posture and rest in muscular work and comprises two interesting studies. The first deals with weight carrying, a process of prehistoric antiquity. The investigator, E. M. Bedale, has taken eight ordinary methods in common use and determined the net working metabolism involved in each case. The methods were (1) weights placed on a tray held in front of the body, (2) weights on a tray supported by shoulder straps, (3) equal weights carried in either hand, (4) weights carried on a board on the left shoulder, (5) weights on a tray supported on the left hip, (6) weights placed in a rucksack, (7) weights in pails on a shoulder yoke, (8) weights on a tray upon the head. The loads, which varied from 20 lb. to 60 lb., were carried along the level at an even pace for 100 yards, after which metabolism was ascertained by the Douglas bag method. No attempt was made to determine the maximum load or the mechanical efficiency of the work. The results obtained, which are given in detail, are fully discussed and shown in graphic form; they indicate conspicuously low metabolism costs for yoke-carrying; appeal to ventilation-rate, pulse, and blood-pressure changes show that this method involves less physiological disturbance than any of the others. A critical point, for the individual (a female) observed, was noted at about 40 lb. for the maximum load for rucksack-carrying and tray-carrying, but not until 60 lb. was reached for yoke-carrying; this critical point is important and calls for further extended inquiry, since work becomes more costly in metabolism for heavier loads and is, therefore, economically more expensive. A complex interaction of four disabling factors—local strain, posture, gait, and chest freedom—is concerned in each method, and where these factors are least concerned the method is physiologically least expensive. This investigation suggests that a load should not exceed 35 per cent. of body-weight, but further work in both laboratory and factory is needed before a definite rule can be laid down.

The second section of the report, contributed by Dr. H. M. Vernon, deals with strength of pull, or weight-lifting power, as determined by a dynamometer, the spring balance of which registered up to 500 lb. The handle could be fastened at different heights above the floor level; the power of pull was found greatest with the handle at 28 inches from the floor, and fell off above and below this height, but below 15 inches it became increasingly greater as floor level was approached. Standing on one leg instead of two only diminished the pull by 2 per cent., while using one hand instead of two nearly halved the pull. Rest pauses of varying duration were introduced; but the total work then done was less than without the rest pauses, so long as the subject remained motionless during the rests; but, if he changed his posture by bending his shoulders or moving his arms, and by so doing influenced his circulation, the total work done was decidedly greater, while no greater acceleration of the pulse occurred. In fact, capacity for work was far more beneficially affected by change of posture during an interval than by the length of the interval. Hence the deduction is drawn that postural changes should be encouraged in industrial work; thus for many processes which can be done equally well sitting or standing, alterations in posture should be the rule; while apparently unnecessary and undesirable movements indulged in by operatives at repetition work may be introduced unconsciously by them in order to promote circulation through fatigued muscles.

[1] The Effects of Posture and Rest in Muscular Work. Industrial Fatigue Research Board. Report No. 29. H.M. Stationery Office. 1924. Price 2s. 6d. Pp. 55.

THE LIMITS OF MICROSCOPY.

THE labours of professional microscopists in the latter part of the nineteenth century, stimulated and encouraged by the vitality of such bodies as the Royal Microscopical Society, have resulted in production of such simple, cheap, and efficient instruments that no student and no practitioner of medicine has any valid excuse for not possessing one and making practical use of it. Indeed, the microscope has become something of a cult and has been regarded as the end rather than as a means. Possibly "the microscope" is not held in such awe nowadays as it was by the latest Victorians, but there is nevertheless a tendency to look upon it as the last court of appeal. And in medicine this, no doubt, is fairly true. In bacteriology, for example, it is the highest court we have, though it would astound the general public to know how small amount of his time the bacteriologist devotes to microscopical work. But it is the last word in the study of much disease.

But all know that slavish dependence on the microscope has definite dangers. Microscopic technique is not entirely without its difficulties. Even for the simplest procedures a certain amount of training and practice is necessary, while for more advanced work the necessary apprenticeship may well extend into years. For the majority of medical men this apprenticeship is impossible; but they can compensate to some extent for lack of skill in the use of the more complex instrument by learning to employ a simple hand lens. What is commonly lost sight of is that the microscope merely increases the range and power of normal vision. But only to a certain extent. It enables us to distinguish the present biological unit, the cell, but it does not go very much farther than this. If we wish to gain information about the structure of the ultimate, or penultimate, units of matter we must use other methods and other instruments. Sir William Bragg[1] has recently described in language so clear and simple that even the most uninstructed layman cannot fail to understand him, how by the use of the X rays it is possible to study the actual structure of molecules. Our mental vision can, as it were, actually see the smallest body which we can imagine. But this takes us a long way from ordinary medical practice. If having eyes we see not, neither the microscope nor X rays will help us, and for much the same reason that a high ocular merely intensifies the defects of a poor objective. The first duty of a medical man is to train his senses so that, unaided, they may inform him as exactly as possible about

[1] Concerning the Nature of Things. G. Bell and Sons, Ltd. 7s 6d.

his surroundings. Confronted with any particular problem in diagnosis he should be able to collect all the relevant facts which may be recognisable by his unaided senses. Only if these are insufficient to answer the question should he resort to adventitious aids. And it is as well to realise that the microscope will reveal quite a new range of facts. It may be that the single one which is necessary to solve the problem will be immediately apparent; but it may equally well happen that the new facts will complicate the matter still further.

It is a safe rule in microscopy, as in other things, never to "press." As the expert golfer always drives well within his powers, but can pull out an extra 30 or 40 yards if necessary, so the expert microscopist likes to keep a few magnifications in reserve. Every teacher of histology knows the difficulty of making his students use the lower powers of their microscope. The tyro instinctively starts with the highest powers available; the expert invariably begins with the lowest. As a general rule, the higher the magnification, the more complicated and specialised does the picture appear, the more difficult is it to appreciate the wood for the trees. Very often a hand lens is all that is required, and it has the advantage of being a far less dangerous weapon than the compound microscope. Dr. Erwin Christeller [2] has recently reverted to the subject of histo-topography in an article describing a new method of preparing sections of whole organs. The article, which is profusely illustrated, demonstrates very clearly the value of this link between anatomy and histology. While the natural limitations of naked-eye anatomy may fail to demonstrate the structural alterations underlying a pathological process, a too limited adherence to histology may also fail in that it tends to obscure the sense of perspective. But a combination of the two will very often show all that is required. Only those who have paid attention to histo-topography realise how valuable a method of study it can be. Sir Lenthal Cheatle has familiarised us in this country with the use of the large section in his study of mammary and other carcinomata, and it is a matter for regret that greater use is not made of the technique.

RECENT RESEARCH ON DISEASES OF THE BLOOD.

WORKERS along associated lines in this country will welcome the summary of recent papers on blood diseases, compiled by members of the staff of the Huntingdon Memorial Hospital of Harvard University under the names of Isaacs, Minot, and Buckman, in the *Boston Medical and Surgical Journal* of Jan. 1st, 1925. The scope of the summary is extensive and indications are given of the nature of the progress made. Under histopathology 40 references to recent publications are given and each element of the blood receives due attention. In Addison's anæmia the great frequency of the following signs and symptoms are recalled in 25 references—namely, the nervous and mental manifestations, the specific gravity fixation of the urine with the increased output during the night, leucopenia, achlorhydria, the presence of macrocytes and megaloblasts in the blood-stream, and the yellow tint of the serum and plasma. The subject of purpura hæmorrhagica (essential thrombocytopenia) receives wide attention, and about 40 cases treated by splenectomy are stated to have been recorded. The results admittedly constitute one of the most striking advances in the therapy of blood diseases of recent years. In this country splenectomy in this disease has been practically untried—indeed, the only cases familiar to us are two which were shown at the Royal Society of Medicine in December last by Dr. G. A. Sutherland. Under leukæmia observations on the effects of more adequate irradiation methods in 78 cases of chronic myelogenous and 50 cases of chronic lymphatic leukæmias show that symptomatic improvement occurs in 95 per cent. of cases. Life is only slightly prolonged however. The basal metabolic rate is shown by several workers to be a better indicator of the severity of the disease than the white cell count per se. The importance of differentiating the fatal condition of acute leukæmia from infective mononucleosis, from which spontaneous recovery is the rule, is stressed. Erythræmia (Vaquez-Osler disease) is next considered from the conclusions of 18 published papers. The familial factor is greater than is supposed. The analogy to leukæmia and the white-cell marrow and erythræmia and the red-cell marrow respectively is made, and the symptomatic group (erythrocytosis) receives attention. Roentgen ray treatment offers some means of controlling the disease, and six workers state that benefit is greater where large doses of short wave-length therapy are given over the long bones. Splenic treatment alone gives little effect. The administration of blood-destroying drugs such as benzol and phenylhydrazin has been tried. Blood disorders in infancy and childhood are extensively summarised from a bibliography of 67 publications. Besides the various diseases, reference is made to little known features, normal and abnormal, of the blood in early life such as coagulation time, bleeding time, volume index, and colour index. The value of this summary of diseases of the blood is heightened by the fact that the bibliography is almost entirely drawn from publications which have appeared during the past four years.

[2] Virchow's Archiv, Bd. cclii. Julius Springer, Berlin.

THE CENTENARY OF JOSEPH ROLLET.

THE centenary of the birth of Joseph Rollet, the eminent surgeon of the Antiquaille Hospital at Lyons, was recently celebrated at the Faculty of Medicine of that city, when the various aspects of his life and work formed the subject of addresses by MM. Thibierge, Jeanselme, Nicolas, and Justin Godard, the Minister of Labour and Hygiene. We are indebted to Prof. Nicolas [1] for the following account of his achievements. After graduating at the Paris Faculty of Medicine in 1848 with a thesis on traumatic intracranial hæmorrhages, Rollet came to Lyons, and after unsuccessfully competing for the post of director of the Hôtel Dieu, was appointed in 1850 surgeon-major to the Antiquaille Hospital. Among his predecessors in that office had been two celebrated pioneers in syphilology—namely, Baumès, whose name is often associated with Colles in the well-known law relating to the immunity of the mother suckling her syphilitic offspring, and Diday, the author of the classical work on congenital syphilis. During the nine years that Rollet remained at the Antiquaille, he revolutionised the study of venereal disease as follows. In the first place he proved the erroneousness of the two views for which Ricord had been responsible—viz., the identity of syphilitic and soft chancre and the non-contagious character of secondary syphilis. Secondly, he established the existence of the mixed chancre or the association of syphilis and chancroid, which served to explain the occurrence of constitutional syphilis after what was apparently only a soft sore. Thirdly, Rollet's work was of considerable value in its therapeutic, prophylactic, and medico-legal applications, particularly as regards the dangers of syphilitic infection in the case of glass-blowers and wet-nurses, as well as in arm-to-arm vaccination. Rollet's work was all the more remarkable as it was carried out in the pre-bacteriological era without any laboratory assistance but by his unaided clinical observations. Rollet died on August 2nd, 1894, shortly after he had been appointed professor of hygiene at Lyons and on the very day on which he was to have presided over the Congress of Dermatology. Prof. Nicolas concludes his address by describing him as the greatest syphilographer in the course of three centuries, and one of the prime benefactors of humanity.

[1] Bulletin Médical, Dec. 10th and 13th, 1924.

OVERCROWDING AND INFECTION.

THE medical officer of health for Sheffield, Dr. F. E. Wynne, regards the overcrowding in that city as more acute than in other urban centres. In the country generally, in spite of the admitted shortage, there was, on the evidence of the Registrar-General, an actual increase between 1911 and 1921 in the number of rooms per person, whereas in Sheffield there was a decrease of 0·04. Much of the worst overcrowding occurs in sublet houses or houses let in lodgings. It is, he thinks, probably unequalled since the 'forties of the last century, and in a paper which he read before the Epidemiological Section of the Royal Society of Medicine on Jan. 22nd Dr. Wynne discusses whether the "frightful influence" of overcrowding, as feared by Lord Shaftesbury and Cobden, still holds in the same measure. Some 40 years ago Dr. J. B. Russell [1] was able to demonstrate a high degree of correlation between the incidence of zymotic disease and overcrowding, the rate per 100,000 of population being 478 in 1–2 roomed houses, 246 in 3–4 roomed houses, and 114 in houses of 5+ rooms. Dr. Wynne has made an analysis of the incidence of scarlet fever and diphtheria in Sheffield according to the number of rooms available, and although the figures are not strictly comparable with Dr. Russell's, yet they seem to Dr. Wynne to justify the suspicion that overcrowding per se has become a less important factor in the spread of infectious disease than it was 40 years ago. In Dr. Russell's figures the increase in incidence of zymotic disease in the worst houses as compared with the best is 419 per cent. In the Sheffield figures, which we reproduce here, the increase is 37 per cent. in the case of scarlet fever and 87 per cent. in the case of diphtheria.

Table showing Incidence of Scarlet Fever and Diphtheria in Sheffield under Different Housing Conditions During the Year 1923.

Invaded households. (I.H.)	Total occupants.		Cases under 15 years of age.	Attack-rate.	
	All ages.	Under 15 years of age.		Per 1000 at all ages.	Per 1000 under 15.
Scarlet Fever.					
I.H. with less than one person per room	1,324	636	342	258	538
Total H. with ditto	145,724			2·35	
I.H. with one or two persons per room	3,694	1784	700	189	392
Total H. with ditto	275,938			2·54	
I.H. with more than two persons per room	1,279	677	186	145	275
Total H. with ditto	57,738			3·22	
Diphtheria.					
I.H. with less than one person per room	367	147	91	248	619
Total H. with ditto	145,724			0·62	
I.H. with one or two persons per room	1,302	615	232	178	377
Total H. with ditto	275,938			0·84	
I.H. with more than two persons per room	492	264	67	136	254
Total H. with ditto	57,738			1·16	

The figures given as the total occupants living under the different degrees of density of occupation in the city represent private families, and are approximate only, exact figures not being available in the Census report for 1921.

The total number of persons in private families was 479,400 (before extension of city), and the total population was 490,639.

Dr. J. Macmillan reported similar increased figures for Woolwich in his annual report for 1923. Should these figures bear criticism, and Dr. Wynne thinks they will, the explanation may be sought either in reduced virulence of the infecting agent or in increased immunity of the individual attacked. After referring to the remarkable recent decline in the severity of scarlet fever and of small-pox and the practical elimination of enteric fever, Dr. Wynne expresses his belief that there are variations in the infectivity of many pathogenic organisms which make for a lessened incidence of disease quite apart from environmental conditions. He holds that the non-existence of destitution has removed one of the predisposing causes of infection; during all the post-war period of dislocation in trade and of unemployment everybody has been fed, and among the wage-earners and the unemployed fewer people (we are here quoting Dr. Wynne's words exactly) have been overfed. Enforced economy, he thinks, has probably a valuable effect on the selection of dietary in humbler households, and he finds some evidence that the work of Hopkins and Mellanby is percolating through various health agencies to produce a practical effect on the habits of the poorest.

[1] Quoted by Sir Arthur Newsholme in "Elements of Vital Statistics," third edition, pp. 162–3.

INTERNATIONAL CONGRESS OF RADIOLOGY.

UNDER the joint auspices of the Electro-Therapeutics Section of the Royal Society of Medicine, the Rontgen Society, and the British Institute of Radiology, a Congress of Radiology will be held in London from July 1st to 4th next. The object of this preliminary congress is to bring together radiologists from all parts of the world to discuss subjects of interest, and to secure the formation of a comprehensive international committee and the establishment of a full international congress to be held at stated intervals in different countries. Physics, electro-therapeutics, and allied subjects will be included in the scope of the Congress, to which radiologists from all countries have been invited. Radiological and electro-therapeutic societies are being asked to send approved representatives who shall be eligible to serve on the proposed international committee. In connexion with the Congress there will be exhibitions of apparatus and of radiograms, including dental radiograms. In the week following the Congress visits to other centres of interest will be paid. Arrangements are being made through an agency for travelling facilities and hotel accommodation. The President of the Congress will be Dr. C. Thurstan Holland, the Secretary-General, Dr. Stanley Melville, while Dr. J. E. A. Lynham and Dr. John Muir act as joint secretaries of a large organising committee under the chairmanship of Dr. Robert Knox. All papers intended to be read at the Congress must be sent, not later than May 1st, to the secretary-general, at the British Institute of Radiology, which will be used as the administrative centre for the Congress. Further particulars will be announced in due course. Correspondence and suggestions on any matter in connexion with the Congress are invited, and should be addressed to the Secretaries, International Congress of Radiology, care of the British Institute of Radiology, 32, Welbeck-street, London, W. 1.

IT is with regret that we have to record the death of Dr. N. Kulchitsky, lecturer in histology at University College, London, which occurred on Saturday, Jan. 31st, as the result of a distressing accident in the new anatomy building of the College in Gower-street, three days previously. Dr. Kulchitsky, who was for some time professor at the University of Kharkov, Russia, was appointed lecturer in University College three years ago.

CHADWICK PUBLIC LECTURES.—A lecture, illustrated by epidiascope, on International Hygiene will be given by Prof. E. W. Hope in the house of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W., on Feb. 16th, at 5.15 P.M. Sir James Crichton-Browne, F.R.S., will preside. Admission is free.

SIR GEORGE BERRY
(Combined Scottish Universities).

CAPT. WALTER E. ELLIOT
(Glasgow: Kelvingrove).

COL. F. E. FREMANTLE
(Hertford: St. Albans).

DR. L. HADEN GUEST
(Southwark, North).

SIR HENRY JACKSON
(Wandsworth, Central).

DR. E. G. GRAHAM LITTLE
(London University).

SIR RICHARD LUCE
(Derby).

DR. ALFRED SALTER
(Bermondsey, West).

DR. DRUMMOND SHIELS
(Edinburgh, East).

PROF. THOS. SINCLAIR
(Queen's University, Belfast).

DR. THOS. WATTS
(Manchester: Withington).

DR. J. H. WILLIAMS
(Carmarthen: Llanelly).

MEDICAL MEMBERS OF THE HOUSE OF COMMONS.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CVIII.—THE TREATMENT OF ANAL FISSURE.

ANAL fissure, though one of the minor and common rectal conditions, can cause an extraordinary amount of suffering. The prolonged periods of pain, and fear in anticipation of succeeding actions of the bowels, combine to produce a real vicious circle.

It is now generally agreed that fissure results from over-distension of the anal canal during defæcation: a split occurs, usually posteriorly, and if the injury is repeated the tear tends to become deeper and indurated with increasing chronicity. The view originally advanced by Sir Charles Ball that fissure results from tearing down of an anal valve is probably only true in a very small percentage of cases: most anal fissures are at the extreme lower end of the anal canal well away from the line of the anal valves, and, moreover, one sees numbers of cases of enlarged anal papillæ which have not caused fissures.

In women, about 5–10 per cent. of fissures occur anteriorly. There is a troublesome class of case in which multiple superficial fissures tend to occur; this seems to be due to abnormal narrowness of the anal canal, whether as a congenital defect or resulting from contraction of scar-tissue.

Before deciding on the line of treatment to be applied in a given case, it is essential (1) to decide if the fissure is a simple one, (2) to ascertain the local characteristics of the fissure, whether shallow or deep, soft or indurated, and (3) to exclude any other rectal lesion.

Simple fissures form the very large majority of cases seen. The differential diagnosis is not difficult. A tuberculous ulcer has the characteristic discoloured undermined edge of tuberculous lesions elsewhere, and on close examination may be found to be spreading up into the anal canal and down to the peri-anal skin in a manner quite foreign to the chronic simple fissure. Anal fissures occurring in syphilis are generally multiple and associated with condylomata; there will probably be other evidence of the disease and the W.R. will confirm the diagnosis. It may be difficult to differentiate a squamous carcinoma arising in the anal canal in an early stage from a very indurated simple ulcer; in a suspicious case in an elderly subject a section for microscopic examination should be taken through the margin of the ulcer.

Indurated Fissures.—The determination as to whether the fissure is or is not indurated is of vital importance from the point of view of treatment. Induration is a mark of the chronicity of the lesion and a sign that inflammation is taking place around it. The characteristic smooth inflamed tag at its lower margin is due probably to infection and lymphatic stasis, and offers an insuperable barrier to effective drainage of the ulcer apart from operative treatment. A large majority of anal abscesses are found to originate in a chronic fissure which has pocketed; a submucous abscess forms and makes its way externally, pointing just outside the anus. If the fissure is not palpable with a finger, it is clearly a superficial lesion which may heal under palliative treatment.

Associated Rectal Lesions.—It should be the rule in every case of fissure to make a thorough digital examination of the rectum as soon as practicable so as to ascertain whether the fissure is the only rectal lesion. Sometimes it may be impossible to do this except under general anæsthesia, but in most cases, by adopting the methods presently to be described, it will be found possible, either immediately or after a short course of palliative treatment, to pass a finger and perhaps a speculum into the rectum. It is essential to discover if associated conditions such as piles, polypi, proctitis, &c., are present before embarking on any set line of treatment. The most important condition to exclude is the presence of a carcinoma. The following case is an example of the difficulty in diagnosis in certain cases without general anæsthesia:—

A man, aged 29, came up to St. Mark's Hospital with a typical history of severe pain on defæcation accompanied by slight bleeding. On examination a dorsal fissure could just be made out but was so painful that digital examination of the rectum could not be effected; palliative treatment was given. A week or so later he attended again and was found to have developed an ischio-rectal abscess. He was recommended for admission and was shortly after operated upon under general anæsthesia: when a finger was passed into the rectum the presence of the fissure was confirmed, but above it there was an extensive inoperable fungating growth which was proved in due course to be a carcinoma.

Method of Examination.

Inspection of the anus may show the characteristic œdematous "sentinel" pile, and on separating the anal margin the lower extremity of the fissure may be seen; the stretching may cause it to bleed slightly. Associated conditions such as external piles, evidence of fistula, &c., will be noted.

Palpation of the fissure and digital examination of the rectum should then be attempted; sensitiveness in a very painful fissure can be reduced by local application of a 5 per cent. solution of novocaine, by insufflation with anæsthesin (Ritsert) or by injecting its base with 5 per cent. novocaine. The finger, well greased with vaseline and with the pulp facing the fissure, is then passed, and pressure made on the surface remote from the fissure. It should then be possible to differentiate a recent superficial abrasion from a chronic indurated and possibly infected fissure, and also to locate palpable rectal lesions such as foreign bodies, and polypi and other tumours.

Finally, if possible, a small tubular speculum (¾ in. diameter) should be passed and the lower rectum examined. As the speculum is withdrawn the fissure will come into view and very often fibres of the external sphincter muscle will be seen transversely at its base. Sometimes a bead of pus is seen emerging from the fissure: this indicates most certainly that pocketing has occurred and that a submucous abscess has formed, and is a definite indication for operation.

Palliative Treatment.

Only superficial non-indurated fissures can be expected to heal under palliative treatment; the same treatment should, of course, be given to indurated fissures as a temporising measure pending operation, and if for any reason operation is contra-indicated.

(*a*) *Relief of Constipation.*—Constipation must be relieved and the motions rendered soft and regular. An initial dose of castor oil, 1 oz., is often advisable, followed by paraffin liq., ½ oz. t.d.s., with senna or cascara at night, p.r.n. It is a good plan to instruct the patient each night to run into the rectum through a small rubber catheter and funnel about 3 oz. of warm olive oil; this may be retained all night with the help of a pad of wool and a T-bandage, and will render the morning stool smooth and painless.

(*b*) *Relief of Pain and Sphincteric Spasm.*—General treatment in the way of pot-bromide, gr. xx. t.d.s., with aspirin gr. x. nocte will be useful. Local treatment consists in the application of sedative ointments and suppositories. The following ointments are suitable for introduction after each action of the bowels either digitally or by means of an ointment introducer attached to a collapsible tube: Bismuth subnitrate, ℥ii.; cocaine, gr. x.; lanoline, ℥i., or hydrarg. subchlor., ℥ss; pulv. opii co., gr. x.; extract belladonnæ, gr. v.; lanoline, ℥i. At night a suppository containing extract of belladonna gr. 1 may be inserted, with addition to it of morphine acetate gr. ¼ if pain is severe.

(*c*) *Local Applications* at intervals of a week or two may be given to the fissure through a speculum to stimulate healing and form a protective covering to the raw surface. Pure ichthyol may be applied on a glass rod, or the fissure touched with silver nitrate or nitric acid (Hilton in "Lectures on Rest and Pain").

Operative Treatment.

Thorough preparation is most important seeing that the majority of these cases are very constipated, often with hard scybalæ impacted in the rectum. Castor oil, 1 oz., is given two nights before operation, followed by a dose of salts in the morning. On the evening before the operation a soap-and-water enema is given, and an astringent mixture by the mouth containing tincture of opium (℥ x.) and tincture of catechu (℥ss). A half-pint rectal wash-out of plain water is administered on the morning of operation and is repeated if necessary. The usual hypodermic injection of morphia and atropine is given before operation.

The operation of incision of a fissure is designed simply to give drainage. After careful antiseptic preparation with ether soap and lysol solution (℥i. to Oi.) an incision is carried from the upper end of the fissure out on to the peri-anal skin to the extent of about 1–1½ inches. The safe rule in this connexion is to make the external part of the incision double the length of the internal. A few of the fibres of the external sphincter may be divided, if its seems necessary, to secure adequate drainage. Complete division of the sphincter is never required. The lateral skin margins are then excised, including the sentinel tag, leaving a flat oval-shaped wound. Any accompanying rectal polypi, hypertrophied papillæ, or piles are removed at the same time. Some sterilised vaseline is injected into the rectum: a piece of drainage tubing and dressing with dry cotton-wool complete the operation. The wound is left to granulate. It is unwise to attempt a primary suture of the wound as the results of this operation are most uncertain.

After-treatment.—Careful attention is given to local cleanliness. The bowels are opened on the third day and after this the patient should have a warm bath twice daily. The wound is dressed with flat cotton-wool swabs moistened with dilute perchloride or carbolic lotion; they should be inserted so as to keep the skin margins separated until healing takes place, which should be in about three weeks. If healing is slow, brilliant green or scarlet red ointment may be applied. As an alternative to general anæsthesia, operation may be performed under spinal, sacral, or local anæsthesia. If the last method is decided upon the external sphincter should be put out of action by injecting into it on each side of the mid-line posteriorly about 5 c.cm. of 2 per cent. novocaine. The perineal branch of the fourth sacral nerve and part of the inferior hæmorrhoidal nerve will be blocked and a good degree of relaxation obtained. The operation can then be continued in the usual way after infiltration of the operation area.

The old operation of "stretching" the sphincter is now rarely performed. It is unsuitable for a chronic fissure and in a recent fissure a deep laceration is liable to occur—moreover, the sphincter is liable to be torn rather than stretched. The object of operation in a chronic fissure can be summarised in the one word—drainage.

W. B. GABRIEL, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon, St. Mark's Hospital; Surgical Registrar, Middlesex Hospital.

Medicine and the Law.

REX v. BATEMAN IN THE COURT OF CRIMINAL APPEAL.

IN the Court of Criminal Appeal on Feb. 2nd Dr. Percy Bateman was granted leave to appeal against his conviction for manslaughter at the Central Criminal Court on Dec. 9th, 1924, when he was sentenced to six months' imprisonment in the second division. The application was made on behalf of Dr. Bateman by Mr. Norman Birkett, K.C., with whom was Sir E. Marshall Hall, K.C., and Mr. Arthur Davies. The court was composed of the Lord Chief Justice (Lord Hewart), Mr. Justice Salter, and Mr. Justice Fraser.

The prosecution, as will be remembered, arose out of the death of Mary Anne Harding, a woman patient of Dr. Bateman, whom he attended in childbirth, having been called in by a midwife in consequence of complications having arisen, and who afterwards died. Facts not disputed by the defence were that the death followed and was due to the removal of the uterus of the deceased in the course of delivery by the accused, following a complex presentation, and that the accused took no steps to have his patient taken to a hospital until some days later; also that at the hospital she survived her removal by 30 hours. It was, however, denied by the defence that the avulsion of the uterus was caused by criminal negligence on the part of Dr. Bateman, and it was equally part of his case that the delay in removing the woman to the hospital had not accelerated her death or diminished her chance of recovery, and was not due to any desire to cover up his conduct. It was urged on his behalf that immediate removal in the condition in which she was would have been accompanied by grave risk of causing her death.

The matters formally stated by the appellant as the grounds upon which he desired to appeal were that the verdict was not in accordance with the evidence of the medical experts, that Mr. Justice Shearman had misdirected the jury on the law and on the facts, that evidence had been wrongly admitted, that the judge had dealt with matters which were for the jury to decide, and that the verdict was against the weight of evidence.

Mr. Birkett began his argument with a brief statement of the facts bearing upon his application, calling particular attention, with regard to the question of removing the patient to a hospital directly her condition was realised, to the fact that she lay in a room on the fourth floor approached by a narrow staircase. He was arguing that there had not been shown at the trial that there was any negligence in the delivery of the child, when the Lord Chief Justice interposed, saying that there was evidence of pulling, and pointing out that, after it had been made plain that the uterus had come away with the placenta, the accused took no steps and had concealed the matter. With regard to this it was pointed out by counsel that the words admitted by the accused as having been said to the midwife were to the effect: "We had better keep this to ourselves and not tell the relatives," and that his only wish had been not to distress the relatives by informing them of what had happened. Mr. Birkett proceeded to argue that in summing up to the jury Mr. Justice Shearman had said that, in order to convict of manslaughter, there must be proof of gross and culpable negligence, without instructing the jury as to what, for the purpose of a criminal charge, was implied by the qualifications "gross" and "culpable." He referred to R. *v.* Doherty (16 Cox, 306), R. *v.* Williamson (3 C. & P. 635).

In R. *v.* Doherty (in which the charge arose out of a man having shot another with a revolver) Mr. Justice Stephen said (at page 309): "Manslaughter by negligence occurs when a person is doing anything dangerous in itself and conducts himself in regard to it in such a careless manner that the jury feel that he is guilty of culpable negligence and ought to be punished." As an illustration Sir Fitzjames Stephen suggested that if a man performing a surgical operation, either because he lost his head or from forgetfulness, did something he ought not to do, or omitted something that he ought to do, there would be negligence, but that, if there was only the kind of forgetfulness common to everybody, it might furnish a ground for claiming civil damages, but not for making a criminal charge. It would be otherwise if, for example, the surgeon went to attend the case when drunk, and through his drunkenness caused the loss of his patient's life. In R. *v.* Williamson a

man-midwife was on trial for manslaughter having torn away part of the prolapsed uterus of a patient supposing it to be part of the placenta, through which the patient had died. Lord Ellenborough told the jury that in order to substantiate the charge of manslaughter, the prisoner must have been guilty of criminal misconduct arising either from the "grossest ignorance or the most criminal inattention." Lord Ellenborough added: "It would seem that, having placed himself in a dangerous situation, he became shocked and confounded. I think that he could not possibly have committed such mistakes in the exercise of his unclouded faculties, and I own that it appears to me that if you find the prisoner guilty of manslaughter, it will tend to encompass a most important and anxious profession with such dangers as would deter reflecting men from entering into it."

Mr. Birkett submitted that there had been no evidence of negligence at the delivery of the deceased, and that the case should not have been left to the jury.

Their Lordships having consulted, the Lord Chief Justice intimated that counsel, whom he complimented on his able argument, had shown that there was a substantial question to be argued, and that the court would give leave to appeal. Mr. Birkett then referred to the great importance of the case to the medical profession, and to letters that had appeared in THE LANCET since the trial, which suggested that fresh evidence might be available as to the medical questions raised.

Lord Hewart said that if, in addition to the evidence taken at the trial, the appellant's counsel brought fresh evidence to the Court of Criminal Appeal, the question whether it should be admitted might then be decided according to the course taken by the appeal.

It is presumed that argument on the appeal will be heard on Feb. 9th or on some subsequent Monday.

Special Articles.

ON THE ABSENCE OF PROGNOSTIC CRITERIA IN CHRONIC INFLAMMATION.

BY MARTIN O. RAVEN, M.D. OXF., M.R.C.P. LOND.,
MEDICAL OFFICER, ST. MARY'S HOME, BROADSTAIRS.

THERE is a need of criteria in determining the course and prognosis of chronic inflammatory disease. It will generally be found, from the perusal of text-books and other general works on medicine, that in the case of those diseases which spread themselves out over periods of months and years, the question most nearly affecting the patient, namely, "When will he be well again?" or, more technically speaking, the questions of the course and prognosis of these diseases—these questions are left to the imagination of the reader for answer, aided by the preceding pages devoted to symptomatology and diagnosis. Here and there certain symptoms and signs are mentioned as arising during the course of chronic inflammatory disease—e.g., albuminuric retinitis and pulsus alternans, which are pointed out as unfavourable omens, but the general result of an outlook which omits a detailed analysis of the time element in disease is necessarily a hand-to-mouth treatment and a day-to-day prognosis.

Absence of Outlook.

Now the reason for this existing outlook or absence of outlook is not very difficult to discover: patients suffering from chronic disease often change their abode and change their medical attendant and thus make continuous observation difficult, and a clear image of the course of a chronic inflammation can only be built up by continued observations made upon slowly-altering physical signs: such images are too likely to be overshadowed by those of more acute diseases unless studiously preserved, and the result is that there are very few of them presented to the readers of medical text-books to-day. That there are exceptions to this rule, especially in tuberculosis, will be emphasised later.

Now, chronic inflammatory diseases may conveniently be divided into two groups of unequal size: (1) A smaller group, in which we have direct medical or surgical means of attacking a known cause of the inflammation: examples are syphilis, chronic appendicitis, and many cases of tuberculous adenitis of the neck. (2) A far larger class, in which the inflammatory agent may be either unknown or known, but in which only indirect treatment is possible. In these cases we can only place the patient in such a favourable environment as, we hope, will enable the natural forces of the body to overcome the inflammation. The following examples may be given: Most forms of tuberculosis; chronic bronchitis; hyperplastic colitis; fibrosis of the lung; carditis following upon rheumatic infection; chronic nephritis, parenchymatous and interstitial; and chronic mono- and poly-arthritis. In most of the above diseases it is impossible for the physician, in the present state of knowledge, to define a course or give an approximately accurate prognosis in a given case: indeed, the only cases where accurate definition of course and prognosis is forthcoming are usually so advanced as to make a favourable outlook impossible.

Tuberculosis an Exception.

In tuberculosis, however, we have a noteworthy exception to this general position. So much systematised work has been done both in phthisis and in surgical tuberculosis of childhood, that it may be said that, given the coöperation of the patient and the patient's family, and given sufficient time, a favourable result may be confidently anticipated in the majority of early cases: further, a length of time, generally of several years' duration, may be laid down, during which strictly systematised and graduated treatment must be adhered to, and moreover certain criteria may be defined, like milestones along the course of recovery, indicating the amount of retrogression of the inflammation and enabling appropriate modifications of treatment to be made. As examples of such criteria, we may take the cessation of sustained pyrexia after exercise in phthisis, and in tuberculous hip-joint disease the disappearance of the reflex contraction of the psoas muscle produced by eversion of the lower limb. These and other criteria mark the attainment of certain stages towards recovery, and have enabled a minimum time-limit for the whole illness to be laid down for the benefit of all cases of these diseases. Where, in tuberculosis, no such systematic management is adopted, the prognosis must be considered grave, and if a certain number of cases appear to effect a more or less spontaneous recovery, such recovery is the result only of the fortuitous interaction of unknown factors and reflects no credit upon the management of the patients.

This haphazard condition of affairs, which necessarily still exists in many thousands of cases of tuberculosis, prevails in a still higher proportion of other chronic inflammatory diseases, in which little or no systematic investigation into their course has been made. An enormous proportion of patients suffering from them drift about dependent for treatment upon symptoms and signs of very doubtful significance, and it may be doubted whether under such conditions the benefit to one individual of a spontaneous recovery is not outweighed by the danger to others from the undue optimism which it may engender in the mind of the medical attendant. The rheumatic diseases of childhood, which, as is still hardly comprehended, stand easily second to tuberculosis in destroying and shortening life in childhood and later life, are the most depressing example of a national disease which takes an enormous toll of life, because the patients necessarily set out upon a road of unforeseen pitfalls, leading too often to a disastrous end. The small

amount of systematic work which has hitherto been done in this disease points tentatively to the need to remove the patients from the environment in which they first became infected into fresh air for periods of at least six or eight months, and to secure for them a large measure of physical rest, if grave consequences to the heart are to be avoided. Further, during this course of treatment, certain criteria may be defined, marking the arrest of active infection of the myocardium and endocardium: the chief of these are disappearance of anæmia, the slow return of the pulse to normal, often associated with a return of its normal respiratory variation, and stabilisation of the physical signs given by the heart.

Definition of a Minimum Normal Course.

The subject may be opened further: is it not likely that systematic investigation would discover that in the case of other chronic inflammatory diseases there is a minimum normal course which may be anticipated provided that time and the most favourable environment possible be allowed to operate on behalf of the patient? Might not in them, also, certain criteria be elicited, defining the attainment of certain stages on the road to recovery? In tuberculosis and rheumatic disease, not until the constitutional signs have disappeared and the physical signs of the disease have ceased to vary, can it be said that a quiescent stage has been reached and that fairly complete rest may be allowed to be slowly modified; and it would seem that these simple principles may well be applied to other forms of chronic inflammation. Constitutional signs will, by common consent, always necessitate rest and care in every case, but physical signs are harder to observe accurately over long periods of time; the following are tentatively suggested as examples and as possibly able to furnish evidence of the cessation of active inflammation:—

1. *Nephritis*: Constancy in the amount of albuminuria on a constant diet; and constant blood-urea over a length of time.
2. *Colitis*: Cessation of melæna and diarrhœa.
3. *Arthritis*: Restoration of cleaner outlines of joint cartilage in radiograms.
4. *Fibrosis of Lung*: Quantity of morning sputum constant; X ray findings and clinical signs constant in three examinations spread over six months or more.
5. *Rheumatic carditis* (already referred to): Loss of excitability and rapidity of heart beat; stabilisation of physical signs of the heart; return of the respiratory variation of the pulse.

In these diseases, exactly what constitutes the most favourable environment for the patients is a question that only systematised investigation over lengths of time would show: hygienic conditions, however, especially as regards sunlight and fresh air, are of obvious importance; adequate warmth is essential in most cases, and, apart from colitis, a liberal diet is indicated. The requisite amount of rest is a far more debatable point, but in both tuberculosis and rheumatism it will be found that excessive activity is a great cause of relapse and recrudescence. Hence it seems that, while due consideration must be given to the view that the body to be healthy must be active, yet that activity should be so carefully graded as to represent in effect a gradual modification of the amount of rest considered necessary at the beginning of treatment. According to these principles, cases of carditis and nephritis should be allowed to get up little by little after a prolonged period of bodily rest; in colitis adequate rest is secured to the bowel by a reduction to a minimum of cellulose and other indigestible material; while in chronic arthritis a normal position of the joint may only be obtainable by some weeks of weight extension, following on which a slow return to normal activity may be allowed.

The course of chronic disease is a subject over which there is at present much obscurity. Prof. Hugh MacLean states in his monograph on Glycosuria and Diabetes (p. 157): "There are few, if any, chronic pathological lesions which tend to cure, no matter what the treatment, when they have been established for a year or two." But, if once it can be shown that in a given disease there is a tendency towards a certain course being run (as in tuberculosis and, perhaps, rheumatic disease of childhood), so long as environment is favourable and established early: then the questions of prognosis, which are those which most nearly affect the patients, stand in some chance of being answered.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

FURTHER SITTINGS.

(Continued from p. 188.)

THE Commission resumed its sittings on Jan. 26th, the Chairman of the Commission, Mr. H. P. Macmillan, K.C., presiding.

THE CASE OF Mr. HOLMAN.

The case of Mr. Holman was further considered. Mr. Stewart again appeared for Mr. Holman. Mr. Dickens, K.C. (instructed by the Medical Defence Union as to five of its members), and Mr. Croom Johnson watched the proceedings on behalf of certain doctors concerned and Moorcroft Mental Hospital.

The Chairman said Mr. Holman had addressed a most improper letter to the Commission, casting reflections on a doctor who was to be examined, and he understood numbers of other letters had been received. That letters should be so addressed, or to any parties in the case, was most improper. The Commission wished to learn the reasons in this case for issuing an urgency order, instead of the usual slower, reception order; also the manner and circumstances of the certification. This was mainly to see whether there were at present adequate safeguards against wrongful certification. Also the treatment in Moorcroft would be inquired into.

Examination of Sir Maurice Craig.

Sir Maurice Craig was called and sworn and examined by Mr. Dickens, K.C. He said he first saw Mr. Holman in January, 1915, in consultation with his own doctor, when a history of the condition was given him, from which it seemed that several members of the family were of unsound mind. He was stated to have been very excitable and talkative for two years, and to have been a good deal worried by the war. At one place he had tried to throw himself out of a hotel window, and later he cut himself, and eight persons were required to hold him down. At certain periods he thought he was liable to arrest and execution as a German spy, but at other times he seemed normal. While in the nursing home he never appeared to have attempted self-injury. He at this time lost a stone in weight and said he felt physically wrong. When Sir Maurice Craig saw the patient at Dr. Dempster's home the pupils were normal, but soon afterwards changes took place in the physical signs. In reply to a question, Sir Maurice Craig said he always took the human side and did his best to avoid sending people to a mental hospital. The patient's wife showed fear of having him back at home again. He was said to have got into bed on one occasion with his wife while he was wearing his boots, hat, and overcoat, was afraid of being in enclosed spaces, and, though married, showed much interest in a matrimonial agency. He wandered from one subject to another in conversation, his pupils were not reacting well to light, and his knee-jerks were sluggish and unequal. At that time Sir Maurice Craig had no reason to suspect syphilis. Dr. Adler found Wassermann reaction of the blood doubly positive, and that of the cerebro-spinal fluid also positive. There was a high lymphocytosis, about 86 per cent., indicating something pathological.

The witness was closely questioned concerning the significance and reliability of the Wassermann test and the usual behaviour in general paralysis of the insane. He said the result of the Wassermann would

not have influenced his view as to Mr. Holman's mental condition, but it afforded a valuable clue to the condition he was suffering from. He also stressed the periods of remission, during which the patient might behave in a more or less normal way; also the fact that some cases of G.P.I. did not progress beyond a certain stage.

As to why an urgency order was used, Sir Maurice Craig said the patient was at Dr. Dempster's house, and there was no power of restraint. Mr. Holman threatened to leave by himself, and the likelihood was that if that happened he would soon get into the hands of the police, as he was not in a fit state to take care of himself. Sir Maurice Craig tried once more to avoid sending the patient to a mental hospital by drawing up and getting signed by Mr. Holman an undertaking to carry out certain promises, but this was broken, simply, the witness considered, because he was unable to keep it. A certificate had already been obtained for his detention, but it was not used. Wishing to call in somebody to whom the case was quite new—Dr. Stoddart having signed the unused certificate—he asked Dr. Percy Smith to see the patient, and Dr. Smith had a long interview with him alone. What Sir Maurice Craig saw and knew of the patient certainly justified his detention in a mental institution.

Mr. Stewart commenced his cross-examination by asking as to certifying doctors' fees. Asked why he did not tell the patient he was suspected to be suffering from syphilis, Sir Maurice Craig said that in the circumstances he would not do it; a man disturbed in mind might easily have been made worse by such a remark. If syphilis were present in a patient in the primary infective stage it would be the duty of the medical man to inform the patient and ensure that others were not contaminated. Mr. Stewart questioned the witness to show that Mr. Holman having recovered, he could not have had G.P.I.; and Sir Maurice Craig said he had known a captain with the disease take his ship to Australia and back during a remission. At a subsequent stage the Chairman expressed regret that the opportunities Mr. Stewart was enjoying in cross-examining the witness were being largely wasted by this covering up with irrelevant matter, apart from the time of the witnesses and others being valuable. Sir Maurice Craig agreed that no one of the symptoms and things observed and stated on the certificate would, of itself, constitute a sufficient reason for detention as of unsound mind.

Mr. Charles R. Steel, a solicitor, spoke to visiting Mr. Holman at Moorcroft in the interest of relatives and executing a codicil revoking Mr. Holman's will in 1917. He did not think Mr. Holman was of unsound mind when he saw him at Moorcroft. Mr. Holman urged him to procure his release, but he took no steps to that end as he did not want to set his opinion against that of the doctors.

Examination of Dr. Stoddart.

Dr. W. H. B. Stoddart said he first came into contact with Mr. Holman in 1916, and produced the notes he made of his condition at the time, taken at the home of Dr. Dempster at Croydon. The question was as to whether he was in a condition to go unaccompanied to Brighton, as he intended doing, and the witness considered he should not go anywhere without proper supervision and control. He concluded that the patient had G.P.I., but it was an atypical case. The urgency order was rendered necessary by the patient's determination to leave and the fact that there then existed no power to detain him.

The witness was cross-examined as to his recently modified views in favour of Freudism, and admitted that he now looked at the pathology of mental disorders from a somewhat different angle. But this did not change his opinions on the question whether a given patient was certifiable. He added that there were impressions derived from a long interview with a patient which could not be adequately represented on the form of certificate. Answering the allegation, put to him by Mr. Dickens in re-examination, that he certified because he was told to do so, Dr. Stoddart said no doctor would do that; all he was asked was his opinion, and he formed a very firm opinion.

Dr. R. J. Stillwell, of Moorcroft Mental Hospital, said this patient was associated there with patients of his own class and social standing, and he was one of the most talkative and one of the least normal of the whole of them.

On Jan. 27th Mr. Holman's case was further inquired into.

Dr. Percy Smith said he saw Mr. Holman in December, 1916, and the information supplied to him by three doctors added to what he himself found on examining the patient led to his decision that Mr. Holman was insane and that he should not longer remain at Dr. Dempster's house. Answering Mr. Stewart in cross-examination, Dr. Percy Smith said that within the limits of safety he would do his best, as he always did, to avoid actual certification. He did not give any warning to the patient that what he said might be material to justify his detention, it would have been detrimental. He had no regret for having certified Mr. Holman as insane.

Dr. Porter Phillips, medical superintendent of Bethlem Hospital, said Sir Maurice Craig asked him to see Mr. Holman. He did so, and found him restless, excited, and very talkative; the latter trait seriously interfered with questioning. The pupils were unequal, the reflexes exaggerated, and there was marked tremulousness. He was, in witness's opinion, of unsound mind. The patient said he was willing to go to a home, mentioned by the witness, for treatment, and it was decided to take advantage of this willingness to transfer him to Moorcroft, and this was done. It certainly was not a trap.

The Chairman intimated that there would be no need to call Dr. R. H. Cole, who was in attendance, as sufficient evidence had been already taken.

Evidence of the National Society for Lunacy Reform.

Mr. Montgomery Parker, chairman of the National Society for Lunacy Reform, was then called and examined. He urged that voluntary hospitals should be at once provided with a State subsidy and should be under the control of the Ministry of Health, through local authorities, and free of association with the Board of Control or other department of the Government. Also, general hospital wards should be adapted for dealing with incipient mental cases, and those with temporary derangement associated with an acute physical condition. The Society also wished for an arrangement in infirmary wards which would permit of a more efficient classification of cases and their observation. He further asked that, on the legal side, methods of certification and the issue of reception orders should be unified, and pressed for removal of distinctions between private and rate-aided patients. There should be adequate representation of the patient at all stages. Improved methods of curative treatment and better environment of patients, where necessary increasing the nursing and other staffs to ensure this; a statutory requirement on all institutions to appoint a body of authorised visitors, independent of lunacy administration, and licensed; and the introduction of the judicial authority within asylums were further points submitted. The Society also favoured the independent access of medical men to patients. The senior medical officer of an institution should not, the Society considered, be charged with administrative duties. After discharge there should be an extension of opportunities and facilities for after-care.

On Jan. 28th Mr. Parker's examination was continued.

The Chairman said that when a patient recovered from a mental illness it was difficult to determine the exact date of convalescence, and in many cases it would not be wise at once to restore the patient to his former conditions of life. One solution was to make the patient a voluntary boarder when this stage of progress had been reached; another was to use the

parole system, though this would mean some contravention of the law, as a patient on parole had not the same freedom as a sane person.

Mr. Parker said he would make such a patient a voluntary boarder; he realised the necessity of inquiring as to a patient's home conditions before returning him to them. For rate-aided patients the only course seemed to be to send them back to the infirmary. His Society was anxious that a more judicial character should be given to all the proceedings prior to detention, and there should be the right of cross-examination at the inquiry, and the power to call rebutting evidence.

The Chairman pointed out that a similar requirement was urged by the British Medical Association.

Mr. Parker said his Society did not favour doctors passing on their responsibility; what was required from the medical man was a medical report, for which he would be held responsible.

In answer to the Chairman, Mr. Parker agreed there might be cases in which it would be inexpedient to disclose the medical opinion to the patient; if the judicial authority functioned efficiently, the proposals of the National Society for Lunacy Reform would be modified to that extent. He did not think disclosures in regard to lunacy were any more serious than those in divorce, and residence in a mental hospital would become known generally, sooner or later. One strong recommendation was that the patient and his friends should know what steps were open to him to defend himself. Also statements made on hearsay should be brought to the notice of the patient, as they might be susceptible of a reasonable explanation.

Lord Russell pointed out that if the patient were of unsound mind his denial or explanation could not be accepted, and the witness said he meant that a statement of a patient, for instance, should not be regarded as a delusion until it had been investigated, and hearsay should not be accepted without the same process of checking.

The witness quoted a case in which an alleged lunatic insisted on her own moral unworthiness, and it appeared clear that she had a strong religious bent and displayed that moral subjugation which was a condition precedent to Divine pardon. He thought it very necessary that, except on an emergency order, the judicial authority should see every patient.

The Chairman said that point need not be laboured, as there had been a complete consensus of testimony on it. If the judicial inspection was efficient, not perfunctory, he did not see that two medical certificates were necessary; he would be satisfied with the power to call in a second doctor if required. This, he hoped, would be a deterrent to an inexperienced man in lunacy acting in this regard. The certifying doctor should see the patient a second time—i.e., with the justice after he had certified him—and could be required to explain any ambiguous statements on his certificate. The doctor should be able to give evidence on hearsay, as witnesses could not be brought for the purpose from any part of the country. At the second visit the doctor could usefully advise as to the institution the patient could be sent to. The magistrate could compel the attendance of relatives. He agreed that some statements about a patient's condition and prospects could not be made in the patient's presence; and the justice could not exercise discretion in the matter, as he would not know what statements were likely to be made.

Sir David Drummond questioned the witness as to whether he had any cases to bring in which it was alleged patients were wrongly certified, and Mr. Parker said there were cases in which the mental disturbance was of only short duration and the cases should not have been dealt with by certification. Sir David Drummond asked that certificates in one case might be brought in which this was alleged, and the witness promised to comply.

Another contention of the witness was that when a patient was capable of making rational statements an inquiry into his case should be conducted publicly, and Earl Russell asked whether it was really desired that in addition to the relatives and other parties interested, the local reporter should be present, and serve up for the public all the medical and other details. The witness agreed there were difficulties surrounding this requirement, but such a condition as delirium in an acute physical illness, as in pneumonia, was an improper ground for certification. Earl Russell and the Chairman agreed. Finally, the witness said nothing was to be gained by publicity if the judicial authority could be relied on to function properly.

Mr. Parker said few of the public, and not many practitioners, seemed to know what rights a patient possessed under the Lunacy Act, and they were not in a position to secure a copy of the Act when required. There should be a copy of the Act in the possession of every medical officer of health, and it would be a valuable step to have printed for popular use on a card or in pamphlet form the main provisions of the Act in simple language.

The Chairman and Earl Russell agreed this would be a very important document to issue.

The remainder of the sitting was occupied with a discussion of Mr. Parker's proposals for greater liberty in the matter of correspondence for the patients. It was pointed out that in a number of asylums there were locked letter-boxes, and some—the great majority—of the letters written by patients were not fit for anybody to read, hence the censorship which was exercised. The witness considered that if letters were written making complaints, the writers were penalised.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

THE PROVISION OF MEDICAL BENEFIT.

THE official account of the Scope and Administration of Medical Benefit (Section C of the Appendix) was supplemented by the oral evidence of Mr. L. G. Brock, C.B., Assistant Secretary in charge of the division of the Ministry of Health administering the medical benefit provisions of the Acts, and by Dr. J. Smith Whitaker, the Senior Medical Officer of the Ministry concerned with this work.

Central and Local Administration.

The local administration of medical benefit is in the hands of committees, called Insurance Committees, set up for each county and county borough.

(Q. 897.) The statement gives the impression that these Insurance Committees have not much independent voice in making the arrangements for the provision of medical benefit in their respective areas. Is that the case?—A. That is so. . . . The medical profession at a very early stage insisted on central negotiation in regard to the settlement of the capitation rate, and even if it had not been [so], it would, I think, in practice have been quite impossible for Insurance Committees to carry on negotiations in their own areas and to make the sort of arrangements that were contemplated by the original Act with all Approved Societies.

Representatives of Insurance Practitioners.

(Q. 899, 900.) The body representing the medical profession with which the Ministry negotiate is the Insurance Acts Committee formed by the British Medical Association. Constitutionally it has the position requisite for doing so. In every insurance area there is a statutory body (the Panel Committee) elected to represent the insurance practitioners of that area. These Panel Committees, in conjunction with the Local Medical Committees set up under the Act of 1911, elect delegates to conferences held from time to time, and those conferences have since about 1915 recognised the Insurance Acts Committee

* In a previous article the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8.) References to the official statement which has been issued as an appendix in four sections are given thus: Section A, para. 69, is shown as "App. A. 69," and references to the oral evidence thus—Q. 1369.

appointed by the British Medical Association as their executive body. The Insurance Acts Committee reports formally to the conference, the report is laid before all Panel Committees, and their delegates are instructed with reference to that report, so that the authority of the Insurance Acts Committee to represent insurance practitioners is constitutionally derived from the insurance practitioners by a direct chain.

(Q. 929.) Asked whether the consultation with the British Medical Association (or, in the case of chemists, with the Retail Pharmacists' Union) has had the effect of diminishing the importance of the local Insurance Committees, Mr. Brock said :—

I do not think it can be said to have diminished their importance because it is work which they never did. It has made them, I think, considerably less important than the framers of the Act contemplated that they would be.

Cost of Local Administration.

The total cost of insurance committees' administration in England and Wales is £360,000 per annum, or rather less than 5 per cent. of the cost of medical benefit. (Q. 914.) It includes the cost of day-to-day administration and the investigation of complaints; in the main it represents expenditure on the maintenance of various indexes which are necessary, firstly, to prove the title of the insured person to medical benefit; secondly, to attach him to a doctor; and, thirdly, to calculate what is the amount of work, or rather the number of patients accepted by a doctor, and therefore, what share of the total pool available to the area should be allocated to him.

Ready Access to the Insurance Committee.

On the question whether it would be more economical and equally efficient if, for instance, the work were done by county committees only, Dr. Smith Whitaker said :—

(Q. 928.) It is a great advantage in a fair-sized borough that you should have an official of the local committee to whom the insured persons and doctors and everybody can have free access. If you were to centralise the work too much—the actual administration of medical benefit, apart from book-keeping, and that kind of thing—you would not have that ready access which does a good deal to make the thing work smoothly. We should have more complaints if it were not possible for the insured person to go and talk things over with the clerk, and the clerk to talk things over with the doctor.

The "Representation" of Insured Persons.

Every Insurance Committee has a substantial medical element, but there is always a majority of representatives of insured persons.

(Q. 959.) When you speak of these people representing insured persons, they are really selected not by the members of the society, but by the Committee of Management, are they not?—A. I do not think the member of the society has any voice whatever in the election in most cases.

Panel and Local Medical Committees.

(App. C. 10.) The Act of 1913 made provision for the constitution of a statutory body in each area known as the Panel Committee, which is elected by the insurance practitioners in the area under approved schemes. It is representative of the collective opinion of the insurance practitioners in the area, and the Insurance Committee is required to ascertain through the Panel Committee the opinion and wishes of insurance practitioners on matters affecting the local administration of medical benefit. It is optional whether there shall also be a Local Medical Committee, and their functions are limited.

(Q. 961.) Could you tell us briefly what is the exact difference between the Local Medical Committee and the Panel Committee?—A. For practical purposes in the great majority of areas there is no difference at all.

Why the Benefit was Limited to General Practitioner Treatment.

(Q. 995.) In practice medical benefit has been limited to treatment of the kind which an ordinary general practitioner can properly render, and in the Regulations which have been issued under the Insurance Acts and which govern the administration of medical benefit that interpretation has been followed.

(Q. 995.) Can you tell the Commission on what provisions of the Insurance Acts that view of the scope of medical benefit is based?—A. That view was based on the advice given to the Insurance Commissioners by their legal advisers. . . . If every doctor had a right to come on the medical list and every insured person had one, and not more than one, doctor, it seemed impossible to avoid the inference that the scope of medical benefit must be construed as being limited to services which were within the competence of the average general practitioner. Of course, that construction of the Act is admittedly inferential, but had the view taken by the Commissioners been open to question it could very easily have been challenged in the Courts. No attempt ever has been made to challenge it in the Courts. . . . [Further] it was felt that if all doctors were to receive the same rate of remuneration, that implied a uniform obligation, a uniform content of service, and that it would not be equitable to require one man, because of the accident that he possessed some special skill, to render a wider range of service than the rest of his brethren on the medical list.

(Q. 1001.) During the passage of the Bill of 1911 the discussions were influenced by the scope of the treatment provided by the old friendly societies. Usually that was treatment more limited than the general practitioner service provided by the Act—e.g., it was a local service and did not provide for the member when he left the area in which his club or society operated (Q. 1004.) As to the possibility of including some kinds of specialist treatment and excluding others, the witnesses said that no warrant could be found in the Act for this course. It being a question of all or none, and having regard to the fact that the fund was limited and that insured persons could claim whatever the benefit was as a matter of right, the authorities concerned were justified on practical grounds in the course that they took.

Services Outside the Scope of the Contract.

These may be such services as dental treatment not ordinarily given by a doctor. (Q. 1006–9.) As to this, it was stated that a doctor finding a condition of ill-health due to defective teeth could only advise the patient to go to a dentist; if his suggestion were not carried out he must continue to do the best he can for the patient. (Q. 1010.) As to specialist services which an ordinary practitioner would not, as a rule, render, the position is as follows :—

If the patient desires that the doctor should render it, the latter must first of all explain that, in his view, it is outside the scope of the service he is bound to provide under his contract, but if the patient [still] desires that he should perform the service—for example, examination of defective eyesight, prescription for spectacles or something of that kind—he may undertake it and charge a fee. But in any such case he must, within two days after giving the treatment, furnish the Insurance Committee, on a form supplied by them, with particulars as to the service.

The onus is then thrown upon the doctor to show, if called upon, that it is a service not covered by the contract. The Local Medical Committee would first bring their medical opinion to bear on the question and at a later stage the matter may be referred by the Minister to referees. (Q. 1012.) Services are deemed not to involve the application of special skill and experience unless the doctor concerned proves either—

(App. C. 39.) (*a*) That he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered, and has had actual recent practice in performing the service rendered or services of a similar character; or

(*b*) that he has had special academic or post-graduate study of a subject which comprises the service rendered, and has had actual recent practice as aforesaid; or

(*c*) that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

(Q. 1080–1096.) The fact that a particular service which an individual practitioner having special skill might be competent to render could be withheld unless the patient was prepared to pay for it, has given rise to criticism of the service. It was recognised in the early days of the Acts that the services which

insured persons could receive for uniform contributions would be a uniform benefit and that different obligations could not be imposed on different doctors having different degrees of skill. Further, it would not be doing a good service to the insured to try to hold that an operation or other special service which it was dangerous for a considerable proportion of general practitioners to undertake was within the obligation. As regards the widening of the obligation to include some specialist services and not others, the witness said :—

(Q. 1089.) I suggest that when you come to the consideration of the whole of this subject, you will find, as has always appeared to us, that there is no half-way house between the completion of the service, to include everything that can be done outside residential institutions, and the necessity of making the kind of distinction that we have felt bound to draw.

The question of charging fees for special services was sharply distinguished from charging for treatment within the panel obligation.

(Q. 1100.) There would be no scamping the panel patient because he did not pay extra fees ?—A. No. I will not say that no individual doctor would do so, but he would be repudiated by his colleagues. No doctor would justify such a proceeding I am sure.

Number of Doctors Engaged in the Service.

(Q. 1042–1048.) It appears from the evidence that approximately two-thirds of the practising general practitioners are on the panel, the estimated number being stated as 12,000 out of 18,000. In the mainly industrial boroughs the number of doctors on the panel is nearly 100 per cent. This is so, for example, in Walsall, West Bromwich, Dudley, Burnley, Rochdale, and Wigan. When one comes to bigger cities, such as Birmingham and Sheffield, which both have medical schools, there is a larger proportion of consultants and of border-line men who are partly general practitioners and partly consultants. These do not tend to come on the panel. For Birmingham the proportion is 65 per cent., and for Sheffield it is 66 per cent. Taking the county areas the proportion is rather smaller. In Devonshire there are only 54 per cent., in Cambridge it drops to 41 per cent., and in Kent 61 per cent. In the purely industrial areas it is difficult for a man to make any kind of living as a general practitioner unless he does go on the panel. The percentage is much lower in places like Bournemouth and Torquay.

Quality of the Service.

(Q. 1051.) The witnesses were questioned as to the statements frequently made that the services rendered by a panel doctor to his patients are different in character and inferior in quality from the services that he would render ordinarily to paying patients in the same economic circumstances. The reply was that—

In the great majority of areas there was no attempt whatever to discriminate between the insured and the non-insured ; indeed, if there is any discrimination it is probably in favour of the insured, because a doctor would know that if he has to make a choice between two patients and he fails to respond to the call of the insured man he may find himself involved in a complaint.

Areas in which this could not be said confidently of panel practice were probably West-End and other well-to-do districts, where some doctors went on the panel, for example, to treat domestic servants in order that some other practitioner might not get a footing in the house. These doctors do not find it worth while to familiarise themselves with the Regulations, and they may render their services reluctantly.

An Increased Sense of Responsibility.

(Q. 1054.) Asked how the present service compares with the friendly society services before the Insurance Act, Dr. Smith Whitaker said, looking at the broad features of the two systems :—

The first thing that strikes me about the present insurance service is that it is under public control, and that the free wind of publicity blows through all the arrangements. The doctor's contract is clearly defined, whereas in the case of club practice it was very often not clearly defined ; in fact, it was almost the exception for a club to have a clearly drawn-up agreement with the doctors themselves, they having had every opportunity of expressing an opinion.

The witness then referred to the increased sense of responsibility for the service not only by the individual doctor but by the profession collectively, attributable largely to the provisions made in the Insurance Acts for direct participation by the medical profession in the administration of the Acts. By reason of public control, free choice of doctor, and the collective responsibility which the doctors have accepted for the efficiency of the system, there was a great improvement over anything that existed before the Insurance Acts.

Marked Decline in Sickness Benefit.

(Q. 1137.) At a later stage Dr. Smith Whitaker substantially repeated what he said above as to the improved service and its causes. He also quoted "one of the most experienced and most highly respected practitioners on the Tyneside" as saying that in recent epidemics he had become convinced that the insured suffered less severely than the uninsured, because they were not deterred by the same considerations from consulting the doctor as soon as they began to feel ill. They were taken in hand from the beginning.

This was in reply to a question from Sir Alfred Watson, the Government Actuary, containing the interesting statement that he had noticed a very marked decline in the sickness benefit claims of approved societies compared with the standard employed, which is based upon friendly society experience, and asked for an opinion whether the improvement in the medical service was a factor in the drop in the claims to which he referred.

(To be continued).

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Government and the Birth-Rate.

THE National Alliance for the Increase of the Birth-rate in France has supplied to the Government, at the latter's request, some figures with regard to the birth-rate question, in order to assist the Government in framing laws and regulations to protect large families and to provide for the care of children. Some of the figures furnished are of particular interest, and reveal rather an alarming future for the population of France. In order to maintain constant the active population (that is, the number of individuals between the ages of 20 and 60) 900,000 babies must be born in France each year. At present the number of births per year does not exceed 750,000. As the number of marriages annually may remain for some considerable time at about 300,000, then each young couple must produce at least three children, as was the rule up to 1896. Various schemes are therefore suggested to encourage the production of large families, such as lowering rates and taxes for large families and extracting contributions from families of less than three children towards a national birth fund ; giving special facilities to large families in housing matters, instituting a "family vote," and providing insurance for widows and orphans.

A Valuable Sign of Death.

Dr. Icard, of Marseilles, who has published several articles on the signs of somatic death, has just devised a new method of establishing satisfactorily the passing of life from a body. The method consists simply in aspirating the serum from the subcutaneous tissue by means of a cotton thread used as a seton, and then examining the serum to see whether it is acid or alkaline. The tissue fluid is alkaline during life and becomes acid after death, turning alkaline later when the cadaver reaches the stage of ammonical putrefaction. The turning point from alkalinity is

constant and occurs early, taking place about six or seven hours after death, varying slightly in time according as the conditions in the body hasten or retard putrefaction. The author holds that the acidity of the cadaver is one of the stages of putrefaction. Whatever be the cause, the change itself he holds to be an absolutely certain sign of death, as certain as definite putrefaction, of which it is, in some way, the precursory indication. This method is very easy and the technique is of the simplest, as the only requirements are a needle and thread and two pieces of litmus paper, red and blue.

A New Academician.

To fill the vacancy in the Section of Surgery caused by the death of Dr. Eugène Rochard, the Academy of Medicine has recently elected Dr. Mauclaire to its membership. Dr. Mauclaire was born in 1863, and after a distinguished student career became surgeon to the hospitals in 1897 and *agrégé* professor to the Faculty of Medicine of Paris in 1898. He has been President of the Society of Pædiatrics and of the Society of Surgery. He has published many works on almost all branches of surgery, specialising more particularly in bone surgery. He has also devoted much special study to surgical tuberculosis, malformations of the vertebral columns and osteomyelitis. In 1917 he published a book entitled "Surgery of the War," and in 1922 an authoritative work on surgical grafts.

The Control of Private Laboratories.

Mistakes made in analyses conducted by private laboratories may result in serious consequences, and to reduce such possibilities of error to a minimum the Academy of Medicine proposes some measure of general control and registration of all private laboratories which undertake biological or pathological analyses for the public. The Academy therefore requested the Minister of Public Instruction to appoint a commission consisting of representatives of the Faculties of Medicine and of Pharmacy respectively, in order to draw up a curriculum of instruction to be given by the two faculties. At the conclusion of the curriculum three certificates would be granted, one in histopathology, one in chemical pathology, and one in bacteriology. In future one or more of these certificates will be required from any person who intends to conduct a medical analytical laboratory.

The National Bureau of Social Hygiene.

There has been established in Paris by recent legislation a branch of the public health service which has been named the National Bureau of Social Hygiene (Office National d'Hygiène Social). It is under the control of the Minister of Public Hygiene. The objects of this bureau are (1) to collect and publish statistics referring to the sanitary condition of France; (2) to centralise and render available for the national and local public services, the medical profession, the public health officers, and the public, all French and foreign publications and information relative to hygiene, and to the prophylaxis of social diseases; (3) to instruct and stimulate the public in France and in the colonies on all aspects of hygiene and race preservation, by means of continuous and carefully planned propaganda; and (4) to ensure coöperation between public authorities and private enterprise with a view to correlating all efforts made towards the betterment of the public health.

The Hydro-Therapeutics Conference.

The fifth congress of inland and marine watering-places and climatic stations will be held in Paris from April 2nd to 4th. The questions for discussion will be: (1) special legislation for hydro-therapeutic centres; (2) organisation of study-tours to such centres; (3) organisation of a Crédit Thermal; (4) organisation of climatic stations; and (5) the protection of wells and springs. The general secretary of the congress is Dr. Victor Gardette, 3, rue Alexandre-de-Humboldt, Paris 14e.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Price of German Medical Books.

OUTSIDE Germany the complaint has been raised that the price of German scientific books is beyond the pockets of those for whom they are issued, and further that foreigners are charged even higher prices than German students. The suggestion of profiteering in these complaints was answered recently in the press by the president of the German Publishers' Association. He points out that similar complaints have been made with reference to the scientific literature of other countries also, and that the question is connected with the general depreciation of the currency throughout the continent. In Germany many scientific books are now actually cheaper than at the time of their publication before the war, and the publishers' profit on new books is smaller than formerly. As regards journals, the price of any one issue of a German paper is the same as that for a similar English journal. The higher prices formerly charged to foreign readers were a consequence of the daily depreciation of the German currency which induced the publishers to ask for payment in foreign money. Now that the German currency has been stabilised this is no longer the case and the prices are the same abroad as in Germany. It is noteworthy that translations of German books published abroad are often more expensive than the German original edition.

Treatment of Empyema by Rivanol.

Prof. Rosenstein recently read a paper to the Medical Society of Berlin on the treatment of empyema by rivanol without the usual resection of a rib. The method consists in the evacuation of the pus by a trocar and the injection of 50 to 200 g. of a 2 per cent. rivanol solution. This procedure is repeated three to four times at intervals of three days. The empyema is then encapsulated by adhesions of the layers of the pleura, the pus becomes sterile, and eventually the fever disappears. When this has taken place, a small incision between the ribs may be made to hasten the absorption of the pus, which, however, occurs without an incision, although somewhat later. Eighteen cases have been successfully treated in this way without a resection of a rib and in the majority of cases without an incision. The method is not indicated in empyema associated with gangrene of a lung, pyopneumothorax caused by a gunshot wound of the lungs, and with pulmonary tuberculosis. All other cases of empyema, especially those complicating influenza and pneumonia, are suitable for this treatment. Rivanol has also been successfully used in 300 cases of mastitis, where large incisions could be dispensed with by injections of the compound.

Death from Suffocation due to X Rays.

In a recent issue of *Strahlentherapie* Dr. Frick described a case where death had occurred after the administration of X rays for lupus of the neck with swelling of the cervical glands. The first application produced no reaction, but after the second application œdema of the glottis ensued, which led to suffocation, and finally to death. The post-mortem examination showed, apart from the œdema, a small cancer or tumour of the larynx in its first stage, which had not produced any symptoms during life. Early reactions from the application of X rays are not rare, and when the rays are directed to the cervical region swelling of the mucosa of the pharynx and of the larynx may be produced. Hoarseness occurring after the administration of the rays must be carefully observed, because it may be a symptom of commencing œdema of the glottis. In the above case the hidden cancer of the larynx may have contributed to the fatal œdema.

Medical Members of the German Parliament.

In the recently elected German Parliament the medical profession is represented by four medical men and one medical woman. One of them, Dr. Bainsdorf, belonging to the Bavarian People's Party, distinguished himself as the administrative head of the Palatinate during the Separatist riots when all the leading Government officials had been removed from their offices and partly exiled by the French. Two medical members belong to the National Party, including Dr. Hedenkamp, who is the editor of the *Aerztliche Mitteilungen*, the official organ of the Leipziger Verband, and two are members of the Socialist Party. In the Prussian Diet there are six medical members, two belonging to the Centre, two to the People's Party, one to the Socialist Party, and one to the National Party.

Public Health Services.

HOSPITAL NOTES.

THE SCOTTISH HOSPITAL INQUIRY.

THE Hospital Services Committee, which is investigating the extent and nature of the inadequacy of the hospital and ancillary services in Scotland, has now taken evidence from the northern part of the country which shows that, generally speaking, the conditions in the Highlands are unsatisfactory. Geographically and financially, Scotland is divided to a greater extent than is England or Wales, and it was one of the proposals of Sir George Beatson, when giving his evidence as a witness, that Scotland, for the purpose of more efficient hospital administration, should be divided into four districts. Under this scheme each district would have its central hospitals with their auxiliary or recovery hospitals, and a clearing house in each district would be appointed under a commissioner for the distribution of patients.

Dr. G. Dick, medical officer of health for Caithness, said that provision was adequate for infectious diseases, but not for cases of general illness; only about 8 per cent. of admissions to hospital were medical cases. A central hospital would, however, be impossible without State grants and assistance from local authorities. It might be well to have a hospital ship for the Outer Islands and Orkney, particularly to serve the fishing population. Dr. Alexander Asher, of Thurso, declared that the accommodation in the wide area covered by his practice was most inadequate, and was accentuated by the limited space in working-class houses. There was clamant need for provision for surgical cases, and it was also desirable to find accommodation for maternity cases. New hospitals or auxiliary hospitals for Caithness would be unnecessary if the hospitals in Wick and Thurso were brought up to the modern standard of equipment and nursing.

Dr. K. Campbell gave similar testimony of inadequacy in the Oban area, which includes the Hebrides, and advocated lectures upon health, about which there was so much ignorance that he had even known people who were unaware of the locality of their stomach. Dr. J. Laurie, of Greenock, said that there was only one medical officer for the whole of the Greenock Infirmary, and "one man could not do all that work." There were six maternity beds, but there should be 20 or 30. The general hospital accommodation was insufficient, and the pressure could only be met by overcrowding the wards. The ideal hospital would provide for both paying and non-paying patients.

Dr. T. F. Dewar, of the Scottish Board of Health, said that for the most part the accommodation provided for the sick in the poorhouses of Scotland was substantially the same as when they were erected in the middle of last century, and there would be great, if not insuperable, difficulties in the way of utilising them for the general sick without relation to destitution or social standing. By nothing short of radical conversion or practical rebuilding could they be made into efficient hospitals. The Poor-law hospitals proper were admirable and ready for conversion to general hospital purposes.

Evidence from Glasgow, Falkirk, Stirling, Dumfries, and Galloway showed that in each of those places hospitals were being enlarged or that extensions were contemplated. Mr. Robert Barclay, one of the directors of the Royal Hospital for Sick Children at Yorkhill, Glasgow, which he described as "the largest hospital devoted to children in the United Kingdom," said that the present enlargements would raise the accommodation from 275 to 350 cots. In addition to an enlarged admission and out-patient department, there would be orthopædic, electrical, and milk departments, and a department for the manufacture of medical and surgical appliances, together with lecture-rooms; the accommodation at the country branch was, moreover, to be doubled. Mr. Barclay estimated the cost of these schemes at £100,000; £75,000 was appealed for four months ago and most of it had already been subscribed. He advocated the continuance of the voluntary system. If the paying principle were introduced a paying wing should be kept separate, and they should finance themselves. At present there are in Scotland three hospitals entirely devoted to children—in Edinburgh, Glasgow, and Aberdeen. Mr. James Thomson, representing the Glasgow Royal Maternity and Women's Hospital, said that although that institution had only 114 beds, there had been as many as 170 cases in the hospital at one time, and the average number of patients last year was 135.

Prof. John Glaister, of Glasgow, said that accommodation for surgical cases in that city was insufficient. The waiting lists on the surgical side were seriously swollen by adenoid and tonsil cases. The time had come to utilise the accommodation in the Poor-law hospitals, and auxiliary hospitals, erected and run on a paying basis at moderate cost to patients, would be a great boon to the middle classes. He was not in favour of the establishment of general hospitals by local authorities on the ground that their hands were sufficiently full with isolation hospitals, and that most of them had not yet made sufficient provision for the treatment of tuberculous surgical cases.

The Rev. Dr. J. Montgomery Campbell, representing the Dumfries and Galloway Royal Infirmary, was emphatically of opinion that the voluntary principle had proved its efficiency. It had an ethical as well as a practical value. It supplied, as rate-supported institutions never could, the human touch and the neighbourly office in the care and alleviation of sickness. The Dumfries Infirmary was at present meeting the demand, but the supply of beds had almost reached its limit; there are nominally 113 beds, and last year the average number of patients per day was 106.

Giving evidence as to hospital accommodation in the Falkirk district, Mr. W. J. Gibson, chairman of the managers of Falkirk Infirmary, said that they had been obliged to abandon taking paying patients because of the number of ordinary patients who had to be provided for. Outside the hospital there was no accommodation save in the people's homes, but there were many who would be glad of private accommodation. A site had been obtained for a new infirmary, and he thought there would be no difficulty in maintaining it, but the overlapping of appeals for subscriptions ought to be curtailed. The £5000 a year contributed to the Falkirk Infirmary was disproportionate to the £3000 raised in the same district for the Infirmaries of Edinburgh and Glasgow.—Ex-Provost Tomson, chairman of the managers, described the accommodation in Stirling Infirmary as "quite inadequate." It was intended to build an entirely new hospital at a cost of £70,000, and the interest of the people of the district was such that £26,000 was

subscribed towards that sum in six weeks. There is no present provision for maternity cases in Stirling, but the infirmary had undertaken to provide it.

BRITISH HOSPITAL FOR MOTHERS AND BABIES.—The Council for the Promotion of the Higher Training of Midwives is considering means of raising £40,000 to complete the British Hospitals for Mothers and Babies at Woolwich. Additions were made as recently as 1922, but the institution, which is amalgamated with the British Lying-in Hospital, founded in 1749, and the Home for Mothers and Babies, is still inadequate. Its special object is to provide a national training school for district midwives which will provide a training double as long as that usually given.

IMPROVING FORFAR INFIRMARY.—It is proposed to spend about £11,000 on alterations and improvements at Forfar Infirmary in addition to the extension work which is already in hand. Of this sum nearly £7000 will be devoted to a new nurses' block and kitchen. The hospital is seriously handicapped by lack of X ray facilities.

WESTMINSTER'S PRIVATE WARDS.—The private wards at Westminster Hospital are to bear the name of the Prince of Wales, and the new eye wards are to be called "The Wolfe Barry Wards" in memory of Sir John Wolfe Barry, who was chairman of the house committee for nearly 20 years.

£50,000 FOR NOTTINGHAM HOSPITAL.—Mr. W. G. Player has given £50,000 for the extension of Nottingham General Hospital. On previous occasions Mr. Player has given the hospital £10,000 as a war memorial fund and £5000 for the endowment of beds, while his brother, Mr. J. D. Player, is defraying the cost, amounting to between £30,000 and £40,000, of the enlargement of the Nottingham Children's Hospital.

HOSPITAL SATURDAY FUND GRANTS.—Grants amounting to £70,488 have been distributed among 230 hospitals and allied institutions. The largest total—£25,423—was given to special hospitals; the general hospitals were awarded £21,950.

NEW WARDS AT PRINCE OF WALES'S HOSPITAL, TOTTENHAM.—Two new emergency and observation wards are practically ready to be opened. The hospital serves a large industrial area full of factories and workshops and congested streets; accidents are consequently very numerous. King Edward's Hospital Fund has promised £1000 towards completion and equipment on condition that a similar sum is raised by the institution, but at present only about half of that amount has been given. The Rubber Growers' Association has set an interesting precedent by laying the floors of the men's and women's wards with rubber as a gift.

PAYING PATIENTS IN POOR-LAW INFIRMARIES.—The Shoreditch Board of Guardians has appointed a committee to consider the practicability of receiving paying patients in its infirmary. It was stated that although the infirmary is so full owing to the large amount of illness in the borough that the placing of beds in the aisles of the wards is being considered, the workhouse is half empty, and it was suggested that it should also be used as a hospital.

MANCHESTER'S EFFORTS FOR CHARITIES.—Councillor Mathewson Watson, honorary secretary and chief organiser of the efforts on behalf of Manchester Charities, in a recent address gave an account of his experience and the success of the efforts made since 1914. Up to the present more than £350,000 had been raised in Manchester and district on behalf of St. Dunstan's and the National Institute for the Blind. Of that sum about £250,000 had been divided between St. Dunstan's and other institutions for the blind in Lancashire. Henshaw's Blind Asylum in Manchester had received over £20,000. For the King's Fund for Disabled Soldiers and Sailors Manchester raised £70,000, about £25,000 more than any other provincial town. For the Princess Mary Fund for the Nursing Association of Manchester £12,000 were collected. For the Prince of Wales's Boy Scout Fund £3000 and for the "White Heather Fund" nearly £30,000 were collected, and £40,000 for the Red Cross Fund. The Lord Mayor's Two Million Shillings Fund realised 1,466,000 shillings, sufficient to clear off the debts of the local hospitals—altogether about three-quarters of a million pounds since 1914.

AN AMERICAN SCHOOL OF HOSPITAL NURSING.—The Henry Ford School of Nursing and Hygiene and the Clara Ford Nurses' Home have just been added to the Henry Ford Hospital at Detroit, which is now one of the largest general hospitals in the world. The Nurses' Home contains 325 bed-sitting rooms, each with its own bath, and the building has been furnished in the English style, with more than 800 reproductions of famous paintings on the walls. There are dining-rooms, a tea-room, a library, and a lounge, and each nurse has her own letter-box. The School of Nursing has "handball courts" and a swimming bath, biological, chemical, and bacteriological laboratories, and a reference library. There is an auditorium which will seat 700 persons, with a stage and dressing-rooms and equipment for showing motion pictures. The course of instruction will last for two years and four months and, in addition to its technical side, will include music, art, literature, domestic science, athletics, and public speaking. There is said to be a long waiting list of young women of the highest type who, in addition to free board and lodging, will receive 10*s.* a week for pocket money during the first year and 12*s.* 6*d.* a week afterwards. The Henry Ford Hospital, which is a teaching institution, has a staff of nearly 100 whole-time medical officers.

HOSPITAL EXTENSIONS.—It is proposed to extend the Hartlepool Hospital at a cost estimated at between £10,000 and £20,000.—Work is about to start upon extensions of the Batley and District Hospital which will cost £24,000.

WAR MEMORIAL HOSPITAL AT NEWTON-IN-MAKERFIELD.—On a site given by Lord Newton a cottage hospital in memory of the fallen of Newton-in-Makerfield, and costing £9000, was formally opened on Jan. 10th. For building and general purposes £5000 were contributed by the governors of the hospital; a bequest from the late Mr. Robert Stone included £1000 for the hospital and a similar amount for the endowment fund; Mr. C. E. Turner gave £1000; the Vulcan Foundry, Ltd., £5000; the Bazaar of the Foundry yielded £1300; Sir William Collinwood gave £500; Messrs. Greenall, Whitley and Co., £500; and the wife and son of the late Mr. Thomas Vicars gave £1000 for the endowment of two beds.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JAN. 24TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely: small-pox, 147; scarlet fever, 1886; diphtheria, 1123; enteric fever, 31; pneumonia, 1356; puerperal fever, 53; cerebro-spinal fever, 6; acute poliomyelitis, 9; acute polio-encephalitis, 3; encephalitis lethargica, 65; dysentery, 7; ophthalmia neonatorum, 133. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases again exceeded 100, the increase being chiefly accounted for by 65 additional cases notified from Middlesbrough (C.B.), 16 from Derby (C.B.), 20 from Chesterfield (B. and R.D.), and 16 from a group of boroughs and urban districts in Notts.

Deaths.—In the aggregate of great towns including London, there were 2 deaths from enteric fever, none from small-pox, 9 from scarlet fever, 42 from diphtheria, 62 from measles, 195 from influenza, as compared with 142, 124, 100, and 83 in the four preceding weeks. In London itself the deaths from diphtheria numbered 12 and from whooping-cough 44.

Correspondence.

"Audi alteram partem."

THE DIAGNOSIS OF ACUTE DRUNKENNESS.

To the Editor of THE LANCET.

SIR,—I welcome the criticisms of Sir Charles Ballance and Dr. Maurice Cassidy, the chief surgeon and chief physician respectively to the metropolitan police, on the subject of my modest address on drunkenness.

I am gratified that it afforded them "interest and amusement." But it is evident that their interest must have flagged before they reached the end of my address, otherwise they would have noted that, so far from decrying the skill or independence of the medical officers of police, I specifically stated my firm belief that in cases where there seemed any uncertainty as to a prisoner's sobriety, the medical officer ought to, and as a matter of fact generally does, give the prisoner the benefit of the doubt.

Sir Charles Ballance and his colleague are disappointed that the address had so little to offer in the way of new signs or symptoms of drunkenness, apart from a suggestion as to examination of the cerebro-spinal fluid. I must, indeed, have failed in my exposition when I tried to point out that the so-called signs of alcoholic disability of the central nervous system, whether cerebral, cerebellar, pontobulbar, or otherwise, can each of them, individually, be produced by many causes other than alcoholic intoxication. This craving for a new sign implies a total misapprehension of the lesson I wished to convey. St. Paul remarked to the Corinthians that "the Jews require a sign, but the Greeks seek after wisdom." I should have expected Sir Charles Ballance and Dr. Cassidy, on this occasion at any rate, to be amongst the Greeks.

It is still more surprising to find that my distinguished critics range themselves alongside the medical officer who, at the discussion which followed my address, vigorously expressed his view that it was "a grave responsibility to differ from the opinion of a police surgeon." I agree. But it may at times be our duty to take that responsibility, rather than assent to a sober man being unjustly convicted of drunkenness.

If all police surgeons actually conformed to the standard of clinical examination carried out by Sir Charles Ballance and Dr. Cassidy, the percentage of errors, small as it is, would be still lower. Some police surgeons tell me that in a doubtful case they habitually spend half an hour or longer in their clinical examination of the prisoner. These are medical officers from whom one would be very chary in differing. But there are others. I personally know of cases where a perfunctory examination of a few seconds is all that the prisoner gets. The police surgeon smells the man's breath, tells him to walk along a straight line and back, looks at his pupils (!), and then says, "You are drunk"! No doubt in nine cases out of ten, in spite of this crude examination, he happens to be right. But I cannot but be sorry for any sober citizen who may happen to fall into the hands of such a medical officer, if he meets him "professionally" at a police station after dinner.

My statement that medical officers differ widely in their susceptibility to suggestion on the part of police constables is so conspicuously accurate as to be almost a truism. So long as medical officers are human beings, so long will they share this human characteristic. In youth, my Presbyterian up-bringing prevented me from accepting the dogma of Papal infallibility and now, at my time of life, I am not likely to subscribe to this new dogma of the infallibility of police medical officers, good as they are. And so I stick to my guns, inwardly comforted by the solace of feeling that Sir Charles Ballance and Dr. Cassidy are really in agreement with me after all.

I am, Sir, yours faithfully,

J. PURVES-STEWART.

Buckingham-street, Victoria, S.W., Feb. 2nd, 1925.

PS.—I have also much enjoyed their jocund reminiscences of the bump supper.

CORRECT POSTURE.

To the Editor of THE LANCET.

SIR,—With reference to your remarks on this subject and the article on the Treatment of Postural Defects in Children by Mr. Muirhead Little in THE LANCET for Jan. 24th, I think that it would be an advantage to the public if more attention were given in schools to the question of posture *before* any defects arise. Physical exercises of some kind are taught in all schools both elementary, secondary, and private, but there does not seem to be any uniformity of opinion as to what is the best method for securing good balance and poise. I venture to suggest that the combination of strength with grace, which is presumably the athletic ideal, will never be acquired by means of physical drill or games alone, and that the question of dancing and rhythm must be introduced, as it is in the Dalcroze method in Geneva, or in the Margaret Morris dancing method in this country. The fact that dancing has a marked psychological effect is surely in its favour as a remedial or preventive measure.

I am, Sir, yours faithfully,

STELLA CHURCHILL, M.R.C.S.,
Chiswick, W., Jan. 31st, 1925. L.R.C.P., D.P.H.

AIR-EMBOLISM FOLLOWING URETHROSCOPY.

To the Editor of THE LANCET.

SIR,—I have read with interest the notes on cases of air-embolism following urethroscopy which appeared recently both in *The Lancet* and *British Medical Journal*. I quite agree with Prof. A. Fullerton in your issue of Jan. 31st that the "advantages of aero-urethroscopy are so obvious that there can be no question of abandoning it," especially as it is possible to reduce the risk to a minimum.

Some time ago I drew up the following rules for my own guidance in the matter: 1. Never do an air-distension urethroscopy on a patient who has had any instrument passed within the previous 48 hours. 2. If even the slightest bleeding followed the passage of this instrument, the interval should be increased to at least a week. 3. Never use air-distension in the presence of urethral hæmorrhage. 4. If the urethroscope causes the slightest bleeding, withdraw it at once.

The majority of cases of air-embolism are due either to using the urethroscope to see why an ordinary bougie cannot be passed, or to persisting in the examination after bleeding has commenced. It is an interesting fact that, although the urethroscope is probably most frequently used in the treatment of chronic urethritis, air-embolism is practically confined to cases of stricture. In the former condition the urethral wall gives before the cannula of the urethroscope and is not injured; in the latter, it is inextensible and liable to abrasion. The greatest care should, therefore, be taken in examining these cases. The cannula should fit the meatus easily, and should slip down the urethra by its own weight. When its progress is arrested, no attempt should be made to pass it further, as this usually causes an abrasion of the urethral wall. The obturator should then be removed, the tube swabbed out, the urethroscope applied, and the light switched on. Air is then cautiously admitted and the examination made. Bleeding usually occurs from a wide-calibre stricture, situated in front of the main one, which is injured during the passage of the cannula.

I think that many of the old cases of so-called urethral shock were really cases of air-embolism. At the post-mortem examination the presence of air in the heart may easily be missed, unless the great

vessels are tied off, and the heart removed and opened *under water*, just as one looks for punctures in the tube of a pneumatic tyre. This, I believe, was rarely done in cases where death followed urethroscopy. Prof. Fullerton wonders if urethral shock ever occurs; I think it does, but it is very rare. I do not accept as urethral shock cases where either cocaine or air-distension has been used, as in the non-fatal cases it is practically impossible to exclude an idiosyncrasy to the drug, or a mild degree of air-embolism. A case occurred while I was house surgeon at St. Peter's Hospital, which I believe was one of true urethral shock. A man of about 50 presented himself at the out-patient department complaining of symptoms suggestive of stricture. The surgeon in charge passed a straight metal bougie about an inch down the urethra in order to measure the size of his meatus preparatory to urethroscopy. The patient suddenly sat up on the couch with dilated pupils and gasping respiration, and in less than half a minute fell back dead. In this case no local anæsthetic and no air-distension were employed.

I have had two non-fatal cases of air-embolism in my own practice, in one of which I noticed definite surgical emphysema of the perineum. They were both suffering from stricture, for which many instruments have since been passed.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 31st, 1925. J. SWIFT JOLY.

THE SALE OF PATENT MEDICINES.

To the Editor of THE LANCET.

SIR,—I am exceedingly glad that THE LANCET has once more offered its powerful aid to promote legislation in the interest of the health of the people. The republication of the report of the Select Committee of the House of Commons on the Sale of Patent Medicines of 1914 and of the text of the Proprietary Medicines Bill of 1920 has again brought into prominence the urgent need for the legislature to protect the public from exploitation by the unscrupulous nostrum-monger. The facts are so well established that it is unnecessary to adduce additional proof that many of these secret so-called remedies may do positive harm by their noxious ingredients or negative harm by leading to delay in the recognition of serious disease.

The Bill in clause v., para. 2, suggests certain valuable safeguards with regard to the registration of proprietary remedies, but curiously omits any regulation to secure constancy of composition or to guarantee dispensing by a person possessing some knowledge of the art. Furthermore, some protection of the doctors themselves seems necessary against the samples chiefly from abroad, accompanied by much plausible pseudo-scientific literature, with which they are pestered, and may at times be deluded.

Recently I had brought to me an alleged colloidal solution of ozone with much literature stating that it was a specific for consumption. On analysis it was found to contain 46 per cent. absolute alcohol, a little free hydrochloric acid, a trace of an essential oil, probably oil of lemon, and a doubtful trace of hydrogen peroxide. Evidence of the presence of ozone in any appreciable quantity was not forthcoming, and even if it were present, there do not seem to be any grounds for the assertion that it is specifically inimical to the tubercle bacillus. Seeing that free hydrochloric acid was present, the statement that when mixed with potassium iodide it would turn starch-paste blue did not seem to prove conclusively the presence of ozone. This is but one example where the claims were so plausible that I went to the length of having a sample analysed. The law on the sale of patent medicines in other countries seems to have prevented the unscrupulous from approaching the public directly, and in consequence, with a cunning worthy of a better cause, they have set insidious traps for the doctors.

Finally, it would seem consistent with its dignity for the medical profession to point out to those whom it may concern that recommendation for public honours should not be made for those who have achieved wealth and notoriety by selling worthless nostrums to a credulous public, even though they may have salved their consciences by munificent benefactions. I am, Sir, yours faithfully,

Cavendish-place, W., Jan. 31st, 1925. CECIL WALL.

PERNICIOUS ANÆMIA, SPRUE, AND THE ENTERIC GROUP.

To the Editor of THE LANCET.

SIR,—If pernicious anæmia and sprue present indistinguishable blood-pictures, then a case of mine which may connect this anæmia with the enteric group deserves to be considered. A girl, aged 23, who died of pernicious anæmia, exhibited the Widal reaction in such dilutions as to make it extremely probable that she had typhoid fever. The course of the case showed that this was not so, but that there was a very rapidly fatal anæmia. This case occurred about 14 years ago. I have since suggested: (1) That it should be ascertained if enteric fevers or T.A.B. vaccine protected even temporarily from pernicious anæmia; (2) that T.A.B. vaccine might be given to persons suffering from pernicious anæmia during their first temporary recovery.

Are there records of any person with a recent history of enteric fever, or recent injection of vaccine developing pernicious anæmia? Anyway, if Dr. C. Elders's conclusions in your issue of Jan. 10th are correct, I have had a case of rapidly fatal pernicious anæmia, which had the blood-picture of sprue and the blood reaction of typhoid fever.

I am, Sir, yours faithfully,

PERCY GULLY, M.R.C.S., L.R.C.P.

Bordon, Hants, Jan. 30th, 1925.

EXTENSOR PLANTAR RESPONSE DUE TO MORPHIA.

To the Editor of THE LANCET.

SIR,—Prof. T. R. Elliott and Dr. F. M. R. Walshe, in a recent paper (THE LANCET, Jan. 10th, p. 65) on the plantar response in certain toxic states, say that "Opium poisoning has apparently not yet been observed to lead to an extensor response." It will therefore be of interest to record this observation, made about six months ago, of the temporary appearance of a double extensor plantar response in a patient who was deeply under the influence of morphia.

A woman of 70 was suffering agonising pain which was discovered later to be due to a malignant metastatic growth in the femur. She was given 1 c.cm. of omnopon hypodermically with no effect. About half an hour later morphine hydrochloride, gr. ¼, was injected and 25 minutes after, as the pain was still extreme, a further dose of morphine hydrochloride, gr. ¼, was giver in the same way. She was examined some two hours after the last injection. She was then in a deep stupor; her respiration-rate was about 8 per minute; she gave a very definite extensor plantar response on both sides; there were no other signs of pyramidal disease. This state of stupor continued for about 18 hours. About 22 hours after the administration of the drug she was awake and able to answer questions. The plantar reflexes were tested and found to give a flexor response on both sides.

It will be noted that this patient had had probably as much morphia as could have been given her with safety, but her condition under the drug was not such as to give rise to anxiety. In the paper already quoted the occurrence of an extensor plantar response during very deep sleep is referred to. This should make one prepared to find the like in subjects sleeping or stuporose under the influence of any hypnotic drug. It is likely that the phenomenon will be observed more frequently now that attention has been directed to it. I am, Sir, yours faithfully,

G. M. KENDALL, M.B., M.R.C.P.

Epsom, Jan. 22nd, 1925.

THE DIAGNOSIS OF APPENDICITIS.

To the Editor of THE LANCET.

SIR,—I have read Mr. Rendle Short's clinical lectures on appendicitis (Part I.), in THE LANCET of Jan. 31st, and especially that part relating to diagnosis, with much interest, but it appears to me to show that even when conclusions are drawn from the vast amount of clinical material he had to work with exceptions are bound to be met with, and it is usually the exceptions which give rise to our real difficulties.

I have had several well-marked cases of appendicitis in which pain was quite definitely not the first sign. One of these occurred in my wife, who is also a member of the medical profession. She went to bed one night apparently perfectly well and developed severe vomiting and diarrhœa during the night, but was quite free from abdominal pain until about 9 o'clock next morning. As the day progressed she developed typical signs of appendicitis and was operated on the same evening. Another case of mine in which vomiting was the first symptom, and preceded the onset of pain by some hours, occurred in a child of 11 years old.

I have been impressed with the number of cases I have seen recently where operation has revealed a severe appendicular lesion, in spite of the fact that the patient had a normal temperature and pulse-rate. One such case was in a woman five months pregnant, where operation revealed an appendix on the point of perforation.

Another recent case of mine has several interesting features. My wife and I attended a multipara in her sixth confinement, knowing that she had had severe post-partum hæmorrhage in her last confinements. The labour was conducted without any vaginal examination being made, and the patient did well for about 36 hours, when she collapsed. She had evidently had a severe intra-uterine hæmorrhage with very little external loss, and we gave her a hot intra-uterine douche under general anæsthesia. Following this her course was uneventful until the fifth day, when she complained of pain in the region of the right iliac fossa and diarrhœa. Examination revealed marked tenderness over the appendix region and much tympanitic abdominal distension. Her uterus was palpable on the left side firmly contracted down, and her lochia were quite normal. A tender swelling could be felt in the right lateral fornix. We diagnosed acute appendicitis after a certain hesitancy on account of her puerperal condition, and advised her removal to hospital. Unfortunately she absolutely refused this until 72 hours later, by which time she was desperately ill with an obvious infection of her general peritoneal cavity. At the operation general peritonitis was found with much free fluid and a perforated appendix. Her ovaries and tubes showed no abnormality, but she had a fibroid uterus which would explain her tendency to hæmorrhages. It was interesting to note that the fluid in her peritoneal cavity was of a clear yellowish-green colour, and quite free from the usual fæcal odour of such cases, but unfortunately no bacteriological examination was made. The woman's condition was most critical for a few days. She is now slowly recovering, but her wound has not yet healed.

I am, Sir, yours faithfully,

W. A. WHITEHOUSE PARKES, M.B., M.R.C.S.

Stourport, Feb. 2nd, 1925.

INFANT FEEDING.

To the Editor of THE LANCET.

SIR,—I was interested to read in your issue of to-day's date the report of their study by Dr. Donald Paterson and Dr. Ruth Darby, in which they state that a thriving infant should receive 2¼ to 2½ oz. of breast milk (or its equivalent) per lb. weight per day. This sounds all right for a child up to 10 or 12 lb., but they do not say whether this is to be carried on with a child weighing 20 lb. If not, how much is he to have? Obviously you cannot give him 50 oz. of milk in a day!

I am, Sir, yours faithfully,

MARIE C. STOPES.

Givons Grove, Leatherhead, Surrey, Jan. 31st, 1925.

THE RESIGNATION OF HOSPITAL APPOINTMENTS.

To the Editor of THE LANCET.

SIR,—In an annotation on the resignation of a distinguished professor of surgery you comment approvingly on his resolve to withdraw from private practice simultaneously with his resignation of his university and hospital appointments. You go on to say, "His professional colleagues will recognise that this is the action of a single-minded man, who has resolved that he will not create leisure in which to discharge private work by the easy process of giving up honorary or official duties." In this I think you display less than your usual temperate attitude. Members of hospital staffs submit to many restrictions and self-denying ordinances which are doubtless necessary and salutary, but here you touch on a matter which must be left to the individual. You must remember that many men are reaching the retiring age whose normal time of harvest has been seriously affected by the war and the subsequent heavy taxation; some of them come under an earlier superannuation rule than their predecessors, which means both delayed promotion and accelerated retirement. But apart from the financial aspect, resignation of private practice, although a relief to some, would deprive others of their chief interest in life. Again, a man may feel that the time has come to entrust official duties to his juniors, but is less likely to do so if this involves complete retirement. I should strongly deprecate any pressure being put upon him to enforce this.

I am, Sir, yours faithfully,

Feb. 2nd, 1925. HOSPITAL PHYSICIAN.

*** "Hospital Physician" is criticising an attitude which it was not intended to assume, but the construction put upon the words is perfectly fair. It was not intended, however, that they should be used with so general an application. Every man must judge for himself what his course of conduct is to be, and circumstances will operate in different directions in different cases. We had in mind the position where institutions have felt, to our knowledge, the withdrawal of valued names when they considered that support might have been continued in spite of the exigencies of personal work.—ED. L.

AMBULANCE COÖRDINATION.

To the Editor of THE LANCET.

SIR,—With regard to the question of ambulances and accidents discussed in an article in THE LANCET of Jan 17th, and in which laymen are at least equally interested with the medical profession, I venture to suggest that THE LANCET might bring influence to bear with a view to securing coördination of the four public ambulance authorities to which reference is made. At any rate, there should be agreement between those authorities which would leave to the London County Council responsibility for the collection and removal to hospitals of cases of accident or sudden illness in streets and other public places when summoned by the police. A convenient and natural (if not too strictly enforced) division of duties would leave cases of accident or illness in houses to the care of the Metropolitan Asylums Board, possibly with the coöperation of ambulances supplied by the St. John Ambulance Association and the Red Cross Society. I have been informed that the Metropolitan Asylums Board would not be unwilling to partake if well-defined and limited duties were assigned to them.

A difficulty might arise occasionally, as in cases of sudden need through accident in a house, where delay might arise through the strict application of such a system as I have suggested above. This points to the assigning of a certain amount of discretion to the police, or to a central authority presiding over the whole system. Whether this would involve difficulties between such bodies as the Home Office, the Ministry of Health, and the County Council would best be brought out at the joint conference, which is evidently needed if anything is to be done, and at which, no doubt, the hospitals and infirmaries would expect to be represented.

With regard to the present scanty supply of ambulances for accidents, it seems to me that it should be possible to place the control and upkeep of these, or the major part of both, upon the County Council, leaving the provision of them, or the major part of it, to the borough councils who should be the best judges of the needs of their districts, and should also be responsible for the original provision of house room for them, whether by voluntary subscription from the public, for whose benefit they would be provided, or from the rates. At any rate, neither 10 nor 13 ambulances can be enough for the County of London, if all, or most, of the unfortunate persons who meet with accidents are to be given a fair chance of prompt treatment.—I am, Sir, yours faithfully,

London, Jan. 26th, 1925. E. A. ARMSTRONG.

"ELECTRONIC REACTIONS."

To the Editor of THE LANCET.

SIR,—As President of one of the two sections of the Royal Society of Medicine, under whose ægis the preliminary communication of Sir Thomas Horder was made, it might not be out of place for me to write. In so doing I have no desire to be drawn into any controversy.

The attitude of the Section of Electro-Therapeutics was strictly impartial and non-committal. We live, fortunately, in the twentieth century, a century in which any suggestion, however fantastic or impossible it may appear at first sight, is sure of a fair and reasonable hearing. In this respect we are far better than were our forbears. In reading, as I did with great care, the full report of the committee of the *Scientific American*, it failed to bring any sense of conviction to my mind. It appeared to me to be peevish, unscientific, and inchoate. No special investigation appeared to have been attempted, and the report bore the mark of a confession of failure—failure to find any one of the persons using the original Abrams box (or, indeed, any of the 50 or more improvements) able or willing to submit to tests, the latter not always suggested from any true scientific standpoint.

The communication of Sir Thomas Horder made many points very clear, and it may be well to emphasise them. It was definitely stated:—

1. That the communication was no more than a *preliminary* report of research.

2. That there was no implied or possible sanction for the use of any apparatus bearing the name of Abrams (including the emanometer of Boyd) for the diagnosis or treatment of disease.

3. That, assuming the probability of there being some purely *physical* basis for electronic reactions, no practitioner (and this naturally included Dr. Boyd himself) had any justification for using any form of apparatus in any way other than in laboratory research.

If anything in Sir Thomas Horder's communication by any possible stretch of imagination could be held to have given any sanction to the gross pretensions of the "E.R.A." practitioner or could have encouraged the public, I can only say that there must be something very amiss with my mentality.

I am, Sir, yours faithfully,

Feb. 2nd, 1925. STANLEY MELVILLE.

Obituary.

GEORGE COOKE ATTFIELD, M.R.C.S. ENG.

Dr. George Cooke Attfield, whose remains were cremated at Norwood on Jan. 20th, was believed to be the oldest medical man in the country.

Born at Bath on Jan. 27th, 1826, a son of the Rev. W. Attfield, he intended to take up either a military or naval career, but as his father raised objection he turned his attention to medicine and entered as a student at St. Bartholomew's Hospital. He qualified M.R.C.S. in 1850, so long ago that he had been affectionately described as the "Father of Bart.'s," and for four years he was associated closely with Sir James Paget and Sir William Lawrence. A keen sportsman, with cricket as his foremost love, he played for Somersetshire and Surrey, being wicket-keeper for the latter county. He was invited to join an All-England XI. to Australia, but his medical duties prevented him from accepting. It was not long after, however, that he did proceed to Australia. He accepted an appointment under the Government as Chief Medical Officer of Prison Settlements in Western Australia, which work he continued until their abolition in 1879. He married the youngest daughter of the late Sir John Roe, then Surveyor-General of Western Australia. He retired soon after his return to this country, and settled in Buckingham-road, Brighton, afterwards moving to Salisbury-road, Hove, where he died on Jan. 16th in his ninety-ninth year.

Attfield possessed a winning and gracious personality. He made many friends both in Brighton and the sister town of Hove, where in spite of his years he continued to live a very active life. In games of all sorts he took a great interest, but his chief recreation was billiards, and at his club at Hove he marked his eighty-seventh birthday by making a break of 87. Only during the last few years—since the war—did his great age begin to tell upon him, but his senses were wonderfully acute right to the last. Dr. F. J. Paley, the well-known Hove practitioner, who died in November last, was a son-in-law of Dr. Attfield.

CHARLES JAMES LOWNDS, L.R.C.P. & S. EDIN., D.P.H. EDIN.

Dr. C. J. Lownds, of East London, Cape Province, South Africa, died in East London on Jan. 18th after an illness of 18 months, and at the age of 61. He was the second son of Thomas Lownds, of the Indian Medical Service, and was born at Rajputana in 1863. He graduated B.A. at Cambridge, and studied at Westminster Hospital, where he was Houldsworth Scholar, and at Edinburgh. He qualified in medicine in 1887, and after serving as ship's medical officer on voyages to China in 1889–90 commenced general practice in England. Eleven years later he went out to South Africa and became resident medical officer to the Frere Hospital, East London. He was a keen sportsman, a cricketer, an oarsman, and a golfer. He was returned on two occasions to represent the constituency in the Cape Provincial Council, and was highly esteemed both as doctor and citizen.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held on Thursday, Feb. 19th, at the Guildhall, Swansea, when discussions will take place on Maternity and Child Welfare, Smoke Abatement, and the Cardiac Cripple. The chair will be taken at 2.30 P.M. by Dr. Louis C. Parkes Deputy Chairman of Council.—A sessional meeting will be held on Friday and Saturday, Feb. 20th and 21st, in the large theatre of the University, Edmund-street, Birmingham, when Prof. John Robertson, M.D., will open a discussion on Fresh Air in the Treatment and Prevention of Disease, and Dr. Cecil G. Teall will speak on Artificial Light in the Cure of Disease. The chair will be taken at 7.30 P.M. on Friday by Dr. Parkes.

The Services.

ROYAL ARMY MEDICAL CORPS.

THE following were successful at the recent competition for commissions in the R.A.M.C.: T. A. J. M. Dodd, M.B., B.Ch., Oxf. and St. Bart.'s; R. A. Bennett, M.B., Ch.B., Edin.; W. D. Speedy, M.B., B.Ch., Trinity Coll., Dublin; J. N. Atkinson, M.B., B.Ch., Trinity Coll., Dublin; W. A. D. Drummond, M.R.C.S. Eng., L.R.C.P. Lond., Univ. Coll., Dundee; J. D. Corner, M.B., Ch.B., Edin.; W. H. Carter, M.B., Ch.B., D.P.H., Edin.; J. G. E. Vachell, M.B., B.Ch., Camb. and St. George's; and J. T. Smyth, M.B., B.Ch., Queen's Univ., Belfast.

The undermentioned (retd. pay) Majs. are granted the rank of Lt.-Col.: T. H. Gibbon and R. E. Humfrey.

Maj. J. E. Hoar is placed on retd. pay.

Capts. C. V. Thornton and E. J. Mannix retire, receiving a gratuity.

MILITIA.

Capt. T. Hampson to be Maj.

TERRITORIAL DECORATIONS.

The King has conferred the Territorial Decoration upon Lt.-Col. (Bt. Col.) T. B. Wolstenholme and Majs. H. W. Read and E. Alderson.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Sub-Lt. B. W. C. Archer to be Surg. Sub-Lt.

ROYAL AIR FORCE.

The undermentioned are granted short service commissions as Flying Officers: H. C. Patterson and F. L. White.

Flying Officer G. R. Nodwell is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lt.-Col. H. Emslie-Smith.

Capt. (Actg. Maj.) W. E. Brierley relinquishes the acting rank of Maj.

Capt. Gokal Chand Sood relinquishes his temporary commission.

Medical News.

UNIVERSITY OF OXFORD.—In a Congregation held on Jan. 22nd, presided over by the Warden of All Souls College (Pro-Vice-Chancellor), the following Degrees in Medicine were conferred:—

Bachelor of Medicine.—Harold E. Harding, Oriel College; Allan W. Linford Row, Brasenose College; and Michael J. W. Minshull, Keble College.

UNIVERSITY OF LONDON.—At a meeting of the Senate held on Jan. 28th the Vice-Chancellor, Prof. E. A. Gardner, being in the chair, the following appointments were made: Mr. H. L. Eason, Member of the General Medical Council; Prof. H. R. Kenwood, Representative (in respect of University College) at the Congress of the Royal Sanitary Institute to be held at Edinburgh in July, 1925.

Lectures in Surgery.—A course of four advanced lectures in surgery on Some Practical Considerations and Experiences in the Conservative Treatment of Fractures of the Pelvis and the Lower Extremity will be given in the Medical and Surgical Theatre at St. Bartholomew's Hospital Medical College (West Smithfield, E.C.), by Sir William I. de Courcy Wheeler, at 5 P.M., on Feb. 16th, 17th, 18th, and 19th. At the first lecture the chair will be taken by Mr. Walter G. Spencer. The lectures, which will be illustrated with lantern slides, are addressed to students of the University and to others interested in the subject.

A lecture entitled the Relation of Paralysis Agitans to the Parkinsonian Syndrome of Epidemic Encephalitis will be given in the Lecture Hall of the Royal Society of Medicine, 1, Wimpole-street, W., by Dr. R. Cruchet, professor of pathology and general therapeutics in the University of Bordeaux, at 5 P.M., on Wednesday, Feb. 25th. The chair will be taken by Sir Humphry Rolleston. The lecture will be delivered in English and illustrated with lantern slides. Admission to all these lectures is free.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on Jan. 29th, the chair being occupied by the President, Sir Humphry Rolleston. The following candidates having passed the required examination were admitted Members: Drs. Wallace W. Adamson, Wilfrid H. W. Attlee, Francis J. Benjamin, Frank Brockington, Charles R. Burns, Ernest N. Chamberlain, Sibyl R. J. Eastwood, Francis W. B. Fitchett, Calvert M. Gwillim, David M. Lloyd-Jones, Montague Maizels, Herbert V. Morlock, Bertram S. Nissé, Hilary J. Roche, George K. Stone, James A. Struthers, and Alfred Williams-Walker.

Licences to practise physic were granted to the following candidates who have passed the Final Examination of the Conjoint Board and have complied with the by-laws of the College:—

M. Abse, Cardiff and Univ. Coll.; J. D. Allen, St. Bart.'s; G. T. Allerton, London; C. A. Amesur, St. Thomas's; Kathleen J. Atkinson, King's Coll.; Margaret A. Bannerman, Royal Free; W. D. Beck, Birmingham; C. E. G. Beveridge, Oxford and St. Bart.'s; O. P. Bewers, St. George's; Anna M. V. Bonhote, King's Coll.; V. H. Boobbyer, St. Mary's; W. A. Bourne, Cambridge and St. Bart.'s; R. N. Brandwood, Guy's; S. Brest, H. F. Brewer, D. A. Brigg, and D. J. Brims, St. Bart.'s; R. J. Brocklehurst, Oxford and St. Bart.'s; T. H. P. Brooks, London; Margaret H. Brown, Charing Cross; W. A. Browne, Madras and St. Mary's; Olive B. Buckley, King's Coll.; W. H. Cameron, Toronto and Middlesex; A. F. Chalkley, Leeds; Gwendoline Chave, Royal Free and St. Mary's; H. F. Chillingworth, St. Bart.'s; G. F. Chissell, Middlesex; L. Chodorsky, Warsaw and St. George's; J. Chronnell, Manchester; H. A. Clegg, Cambridge and St. Bart.'s; A. V. Clemmey, Oxford and Guy's; Doris M. Collins, Royal Free; L. C. Cook, Cambridge and St. Thomas's; L. N. R. Comty, London; Margaret I. B. Cowling, Royal Free; C. P. Craggs, Durham and St. Bart.'s; Dorothy E. Crellin, Bristol; J. Currie, St. Bart.'s; M. Cutner, St. Mary's; Gweneth M. Daniel and Annie E. C. Davies, Westminster; A. L. Davies, Oxford and St. Thomas's; J. R. Davies, St. Thomas's; W. H. Davies, Westminster; A. R. Davison, Cape and St. Thomas's; Charlotta D. N. de Wilde, Royal Free and London; G. E. Ellis, St. Bart.'s; O. M. Ellis, Cardiff; Mary H. Elmitt, Royal Free; C. W. Evans, Univ. Coll.; J. Evans, Cardiff and Charing Cross; N. B. Farman, Charing Cross; J. T. Fathi, London; L. Fatti and C. F. Fernando, Univ. Coll.; M. G. Fitzgerald, Cambridge and St. Bart.'s; Dorothea C. Forbes, Royal Free and St. Mary's; G. R. Ford, Guy's; W. S. Fricker, Cardiff and King's Coll.; T. M. Fripp, Guy's; O. P. Giles, Birmingham; G. D. Gordon, Cambridge and St. Thomas's; H. W. Gordon, Cambridge and St. George's; R. A. Grant, Guy's; F. N. Green, Cambridge and Liverpool; A. L. Greenway, Calcutta and King's Coll.; D. L. Greig, Middlesex; J. M. Hall, King's Coll.; Constance I. Ham, Bristol; G. Hamada, Birmingham; J. E. S. Hamilton, Bristol; C. H. Hampshire, Univ. Coll.; A. W. Hanlon, Liverpool; Hans-Raj, King's Coll.; Irene D. F. C. Hastilow, Birmingham; N. H. R. Hatfield, Cambridge and St. Mary's; S. Helberg, Zurich and London; A. Helmy, Cairo and St. Thomas's; Freda K. Herbert, King's Coll.; E. Herzberg, Heidelberg and Univ. Coll.; A. E. Hill, Guy's; C. H. Hilliard, Cambridge and St. George's; Minnie E. Hope, Royal Free; E. C. Hudson and D. B. Hughes, London; Katherine E. W. Hulse, Charing Cross; O. R. Humphreys, Cardiff and London; F. S. Hunter, Birmingham and Bristol; O. L. Hutchinson, St. Andrews and London; Joy Hwa, Birmingham; S. Hyman, Leeds; Elizabeth Jacobs, St. Mary's; Kate D. James, Royal Free and St. Mary's; E. J. Jenkins, Birmingham; C. W. W. Jeremiah, Cardiff and Middlesex; D. F. Johnstone, Guy's; Dilys Jones, Westminster; L. A. Key, Cambridge and St. Thomas's; Caroline B. Kibble, Royal Free; C. T. Kitching and W. R. Kusel, Cape and St. Thomas's; Marjorie A. M. Lambert, Royal Free; G. S. Landon, Guy's; M. C. Lavin, London; H. Levy, Durham and St. Bart.'s; H. Lewis, Guy's; A. C. Liesching, St. Bart.'s; L. A. N. Line, Birmingham; W. H. G. M. Ling, Edinburgh and St. Mary's; Madeline R. Lockwood, Univ. Coll.; A. C. Lysaght, Bristol and Guy's; Catherine B. McArthur, Royal Free; S. McClements, King's Coll.; F. G. Macdonald, St. Thomas's; Dorothy F. McIntosh, Charing Cross; J. H. Macpherson, King's Coll.; Helena M. J. McQuaid, St. Mary's; R. G. Maliphant, Univ. Coll.; J. P. Marsden, Cambridge and St. Thomas's; G. R. Marshallsay, St. Mary's; E. L. Martin, Charing Cross; A. W. C. Mellor, Cambridge and St. Bart.'s; C. P. Miller, St. George's; F. C. Miller, Guy's; G. J. Morris, Cardiff and Middlesex; C. F. Morrison, Guy's; A. M. Murray, Middlesex; W. R. Nash, Cardiff and St. Bart.'s; Margaret I. Neal, London; E. L. Newell, Oxford and St. Thomas's; R. A. Newsom, King's Coll.; H. W. Nicholson, Cambridge and St. Thomas's; J. A. Noot, Cardiff; R. A. Norman, Guy's; J. N. D. O'Rafferty, Guy's; Evelyn D. Owen, Cardiff and Charing Cross; G. W. C. Parker, Cardiff and St. Bart.'s; A. E. Parkes, St. Bart.'s; W. Parry-Jones, London; R. Paton, Cardiff and Middlesex; V. Patrick, Manchester; F. L. Patterson, London; Gladys L. Pearson, Royal Free; A. D. Pegg, St. Thomas's; Gwyneth Matti Pennant, Cardiff and King's Coll.; H. C. Pierce, Cambridge and Liverpool; C. P. Pinckney, Cambridge and St. George's; C. J. Polson, Birmingham; L. W. Proger, Middlesex; D. C. Prowse, Bristol; R. S. Pyrah, Leeds; V. I. Raman, Madras and London; C. Rankin, Liverpool; M. D. Rawkins, St. Bart.'s; J. T. Rees, Cardiff; Olwen M. Richards, Cardiff and Charing Cross; J. T. C. Roberts, Liverpool; J. J. R. Robinson, St. Thomas's; Wemyss C. Robinson, King's

Coll.; G. F. Rowbotham, Manchester; Alysoun H. Rowntree, Royal Free; A. B. Rufail, Cairo and King's Coll.; K. G. W. Saunders, St. Thomas's; S. D. Schultz, Manitoba and Middlesex; Claude E. Sharp, McGill and Univ. Coll.; T. A. Shaw, Guy's; Frances E. Smith, Charing Cross; Sylvia M. T. Smith, Bristol; A. D. Soares, Bombay; K. H. Southall, Univ. Coll.; I. P. Spurrell, Guy's; Ethel L. A. Stamberg, Royal Free; B. G. Staniland, London; Ruby O. Stern, Charing Cross; D. D. S. Stewart, King's Coll.; P. Subbaramayya, Madras and London; A. F. Taylor, St. Bart.'s; E. J. Thomas, Cardiff and St. Thomas's; J. D. S. Thomas, Guy's; W. S. Thomas, Univ. Coll.; E. Thompson, St. Thomas's; W. R. Thrower, St. Bart.'s; T. G. Tresidder, Guy's; E. A. Trim, Cambridge and St. Thomas's; V. C. Tughan, Univ. Coll.; Beatrice M. Upshon, Madras and Royal Free; L. C. D. van der Borght, Ghent and Univ. Coll.; H. van der Post, Guy's; G. B. W. Walker, Cambridge and St. Mary's; R. A. Walsh and L. B. Ward, St. Bart.'s; Catherine Watterson, Univ. Coll.; H. V. Wells, Charing Cross; J. Whillis, Durham; F. L. White, London; C. R. Williams, Leeds and London; D. G. Williams, Cardiff and King's Coll.; E. R. Williams, Cardiff; H. H. Williams, Liverpool; D. A. Wilson, Middlesex; Emily A. C. Wilson, Charing Cross; H. M. Worth and C. L. Worthington, Guy's; Annie Yoffa, Cornell and Royal Free; G. C. Young, St. George's; and J. C. Young, Guy's.

Diplomas in the undermentioned subjects were granted, jointly with the Royal College of Surgeons of England, to the following candidates:—

DIPLOMA IN PUBLIC HEALTH.

Dora M. Berry, John Bevan-Jones, Hilda A. Bond, and Norman Briggs, Univ. Coll.; William H. Brodie, Aberdeen Univ. Coll.; Eric B. Brooke, St. Bart.'s; Ellinor M. Burnett, Univ. Coll.; Eustace H. Cluver, Oxford and Johannesburg; Eric A. Coldrey, St. Bart.'s; Anant Y. Dabholkar, Grant Medical Coll. and Roy. Inst. Public Health; Arthur A. Denham, Edinburgh, Cambridge, and Roy. Inst. Public Health; Evelyn B. G. Ewen, Edinburgh and Univ. Coll.; Charles Glen, Glasgow; Gertrude E. Harre and Eva M. Johnson, Univ. Coll.; Jiwanlal Kapoor, Punjab and Univ. Coll.; Margherita M. Lilley, St. Andrews and Univ. Coll.; Alfred Mitchell, King's Coll.; William E. M. Mitchell, St. Bart.'s; Robert A. Olphert, St. George's and Univ. Coll.; Ian M. Rattray, Cambridge, St. George's, and King's Coll.; George C. E. Reffell, Durham and Royal Inst. Public Health; Lewis R. Shore, St. Bart.'s; Harvie K. Snell, King's Coll.; Eleanor C. E. Stone, St. Mary's and Univ. Coll.; Eileen M. Turner, Univ. Coll.; and Robert G. R. West, St. Bart.'s.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.

Tridib Nath Banerjee, Calcutta; Khorshed Sorabji Captain, Bombay; Robert P. Cormack, Edinburgh and R.A.M. Coll.; David M. de Silva, King's Coll.; William H. Dye, Middlesex; David H. C. Given, Cork; Henry P. Hacker, King's Coll.; Robert J. Harley-Mason, Middlesex; David Hynd, Glasgow; Honoria S. Keer, Glasgow; Ram Nath Khosla, Punjab; Graham Louw, Edinburgh; Una F. M. Morton, Univ. Coll.; Samuel L. Navaratnam; Des Raj Nayar, Punjab; Joseph A. O'Flynn, Cork; Henry C. E. Quin, Edinburgh and Univ. Coll.; Charles F. Shelton, St. Thos. Hosp.; Prem Nath Suri, Punjab; Ernest W. Wade, Bristol and R.A.M. Coll.; and Henry O. Watkins-Pitchford, St. Thos. Hosp. (With one exception, all the above were students at the London School of Tropical Medicine.)

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

Albert H. G. Burton, Guy's, Maudsley, and Goodmayes; Charles H. Comerford, Dublin and Cane Hill; Ernest H. Connell, Edinburgh and Morningside; Gerald W. T. H. Fleming, Durham, Char. Cross, and Sunderland; Francis McLagan, St. Andrews, Maida Vale, and Hanwell; William G. Masefield, Middlesex and Severalls; George Somerville, Edinburgh and Goodmayes; and Maurice L. Sutcliffe, Univ. Coll. and Horton.

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.

Abbey Wiesener F., and Roland G. Banks-Smith, Sydney and Roy. Lond. Ophth. Hosp.; Bertram R. Bickford, Charing Cross and Roy. Lond. Ophth. Hosp.; William S. Burr, Edinburgh and Roy. Lond. Ophth. Hosp.; Thomas D. Gordon, Dublin and Roy. Lond. Ophth. Hosp.; Evan N. Hughes, Liverpool and Birmingham and Midland Counties Eye Hosp.; Kharsedji Hormusji Kamakaka, Bombay and Roy. Lond. Ophth. Hosp.; Allan P. McLeod, Sydney and Roy. Westminster Ophth. Hosp.; and Ardeshir Dadabhoy Shroff, Bombay and Roy. Lond. Ophth. Hosp.

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.

Norman S. Carruthers, Guy's and Golden Square; Bernard Friedman, Edinburgh and Central London; Frank B. Gilhespy, Univ. and Birmingham and Midland Ear and Throat Hosp.; William G. R. Hore, Guy's and Central London; Geoffrey W. Robinson, King's Coll. Hosp.; and David A. Thomson, Glasgow.

The resignation of Dr. Drysdale as a member of the Council was received and accepted.—Councillors to take the place of Drs. Goodall, Hutchison, Whitfield, and Sir Charles Sherrington, retiring by rotation, and of Dr. Drysdale, resigned, were elected, on the nomination of the Council, as follows: Dr. Phear, Sir StClair Thomson, Dr. Bedford Pierce, and Sir Leonard Rogers; and, to take the place of Dr. Drysdale (for two years), Sir Walter Morley Fletcher.—Sir Francis Champneys was appointed, on the nomination of the Council, a representative of the College on the Central Midwives' Board.—Sir George Newman was elected a representative of the College on the Executive Committee of the Imperial Cancer Research Fund, vice Dr. Sidney Martin, deceased.

The President announced that he had appointed Prof. Edwin Bramwell to deliver the Bradshaw Lecture this year, and that the Council had appointed Prof. Topley, M.D., F.R.C.P., to deliver the Milroy Lectures next year.

Admission of Women to the Fellowship.—It was resolved that the existing by-law No. 194 be repealed, and the following by-law be substituted for it:—

A woman shall be eligible for admission as a Licentiate or Member of the College and for the grant of Diplomas in special subjects on the same terms and conditions as a man, and a woman shall also be eligible for election as a Fellow of the College and shall be entitled to take part in the government, management, and proceedings of the College and to hold any office in like manner as a man is eligible and entitled.

So far as may be necessary to give effect to this By-law (*a*) words in the By-laws and Regulations importing the masculine gender shall be deemed to import the feminine gender also, and (*b*) such alterations as are requisite shall be made in the Letters Testimonial, the Form of Licence and attached Certificate, and the Form of Diploma granted by the College.

Sir Wilmot Herringham and Dr. John Fawcett were appointed as the representatives of the College to give evidence before the Departmental Committee on the University of London.

A report from Sir John Broadbent on the celebrations recently held at the University of Leeds was received, and the thanks of the College were accorded to him.—A report was received from the representative of the College on the General Medical Council on the proceedings of the Council in the session held in November last.—The College voted a contribution of 20 guineas to the St. Paul's Cathedral Fund.—Reports from the Committee of Management were received and adopted, recommending a revision of the syllabus of the examination for the Diploma in Laryngology and Otology, and in Part II. of the examination for the Diploma in Public Health.

Books and other donations to the library, presented during the last quarter, were received; also, from Mr. C. H. Golding-Bird, a miniature bust of Dr. Golding-Bird, F.R.C.P., and a portrait of Dr. Brinton from his son; and thanks were returned to the donors.

After some further College business the President dissolved the Comitia.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The following candidates have passed the Triple Qualification Examination:—

FINAL EXAMINATION.

Joseph E. Israel, William A. D. Oliver, Vethavanam Vaithialingham, Petrus J. Badenhorst, Ebenezer A. M. McKinney, Florence M. Smith, Hee S. Foo, George E. M. Scott, Kathleen M. R. Dunn, Nathan Finn, Kulaverasingham Somaskander, Kizhakkekalattil K. Nayar, Nashid T. Yusif, Harry Krafchik, Ernest G. Douglas, James M. Rutherford, Abraham M. Filer, Rajaratnam W. Crossette-Thambiah, Norman Wren, Percy A. M. Jayewardene, John C. Shiach, Isaac Michaelson, Henry A. Newton, Arcot Vasudev, Mollie F. Churcher, Vakulabharanam V. Narasinham, Eleanor P. Topping, John T. Smith, and William M. B. Rossie.

Medicine.—Fraser D. Muller, Soo Woon Tay, William A. Kemp, Robert T. Johnson, Arumugam Chellappa, Sundaramier Ramakrishnan, Netiamvettil Karunakara Menon, James Houston, Arthur A. F. Shepherd, John Paterson, John S. Whiteside, Alexander B. Jayasuriya, John A. Hyde, Matthew L. Hendrie, Mohammed Mustafa El-Makkawi, Mohammad Junaid Quraishi, and George F. Maher.

Surgery.—Harold B. Wainer, Andrew Wilson, Fraser D. Muller, Albert E. Williamson, Moses Kopelowitz, Robert T. Johnson, Sayed Chaleb, Sundaramier Ramakrishnan, John Harkness, Arthur A. F. Shepherd, Bailey G. V. Dias, John S. Whiteside, Lim Kyee Htoe, Myles E. T. Burke, Mohammed Mustafa El-Makkawi, Henry Goldsmith, James C. Stenhouse, and Mohammad Junaid Quraishi.

Midwifery.—John R. Hetherington, Harold B. Wainer, David D. H. Craig, Soo Woon Tay, Jeremiah Sabaratnam Amarasingham, Charles K. Dowson, Netiamvettil Karunakara Menon, Donald L. Crawford, James Houston, John Harkness, Alexander B. Jayasuriya, John A. Hyde, Lim Kyee Htoe, Cassaly Ismail, Matthew L. Hendrie, Henry Goldsmith, and Archibald C. Young.

Medical Jurisprudence.—Hapuarachige Don J. Lazarus, Richard A. B. Leakey, Barend J. F. Laubscher, David Lumsden, Cecil A. S. Hamilton, Moss M. Bronstein, William E. Williams, Elizabeth C. Mudie, Robert T. Johnson, Bartlet S. Ellis, Nicandro Valerio, Alexander S. Pool, Alexander Rankin, John A. Mains, Souren Kumar Mitra, Cheng Leng Tan, William Jackson, and Walter C. Heslop.

ROYAL INSTITUTION.—On Tuesday, Feb. 10th, at 5.15 P.M., Prof. J. Barcroft, F.R.S., begins a course of four lectures at the Royal Institution, 21, Albemarle-street, London, W., on the Colour of the Animal Creation. The Friday evening discourse on Feb. 20th will be given by Prof. T. H. Pear on Acquiring Muscular Skill.

ROYAL MEDICAL BENEVOLENT FUND GUILD.—The second annual concert in aid of the Guild will be held at the Wigmore Hall, Wigmore-street, London, W., on Feb. 24th, at 8.15 P.M., by the Stock Exchange Male Voice Choir, assisted by Miss Phyllis Lett and Mr. Edward Halland. Miss Harriet Cohen will play. The entire proceeds will be handed over to the Guild. Tickets from 10*s.* 6*d.* to 2*s.* 6*d.* (unreserved) may be obtained from the box office, Wigmore Hall.

LEAGUE OF NATIONS. — Among the various activities of the Health Organisation of the League during this month may be noted the Singapore Conference, which opened on Feb. 4th, and to which were invited representatives of all the Far Eastern health administrations, in order that the working details of the Bureau for Far Eastern Epidemiological Information, to be established in Singapore, might be settled. Further, an interchange of health personnel will be held in England, in which the health officials of a dozen countries, including Germany, the United States, and Russia, will take part.

NOTIFICATION OF DISEASES UNDER THE FACTORY ACT.—An Order dated Dec. 31st, 1924, has been issued by the Secretary of State extending the provisions of Section 73 of the Factories and Workshops Act of 1901, which deals with the notification of certain diseases. Under this Order, which came into effect on Feb. 1st, 1925, the following diseases, occurring in a factory or workshop, must be notified: (1) Poisoning by carbon bisulphide; (2) aniline poisoning; and (3) chronic benzene poisoning. The Order is cited as the Factory and Workshop (Notification of Diseases) Order, 1924, and may be obtained at H.M. Stationery Office, price 1*d.*

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The next quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will take place on Thursday, Feb. 19th, at 2.30 P.M., at the Royal College of Physicians, Queen-street, Edinburgh, under the presidency of Dr. M. J. Nolan. Dr. David Slight will give a demonstration of the Psycho-Galvanic Reaction; Dr. George Gibson, Deputy Commissioner, General Board of Control for Scotland, will read a short paper on the Boarding-Out System; and Dr. William M. McAlister will read a short paper on Results of Treatment of General Paralysis by Malaria.

BOYLSTON MEDICAL PRIZES OF HARVARD MEDICAL SCHOOL, U.S.A.—The Boylston medical prizes, which are open to public competition, are offered for the best dissertation on questions in medical science proposed by the Boylston Medical Committee. The committee is appointed by the President and Fellows of Harvard College. A prize of $500 and the Boylston prize medal is offered every three years for the best dissertation on the results of original research in medicine, science, or the chemical field, the subject to be chosen by the writer, and the next award will be in 1926. Dissertations must be submitted on or before Dec. 31st, 1925. The address of the secretary of the Boylston Medical Committee is Dr. Henry A. Christian, Peter Bent Brigham Hospital, Boston, Mass., from whom further particulars may be obtained.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The fifteenth meeting of the Commission was held at the Home Office, Whitehall, on Jan. 29th, Sir Andrew Duncan in the chair during the earlier part of the sitting and Lord Lawrence of Kingsgate later. Evidence was first received from Mr. J. P. Lewis, C.A., Secretary of the Hearts of Oak Benefit Society, on certain points of policy relating to investment of society funds. The main part of the sitting was devoted to the examination of Mr. Alban Gordon, who submitted far-reaching proposals for the reconstruction of the approved society system on a territorial basis and the transfer of medical and allied benefits to a unified local health service embracing all aspects of medical work. Proof copies of oral evidence and the relative statements submitted at the meeting of Jan. 15th are now on sale at H.M. Stationery Office (2*s.* 3*d.*).

ELLA SACHS PLOTZ FOUNDATION.—The Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation was established in 1923 at Boston, Mass., U.S.A., and during the first year of its existence the trustees have received 32 applications for assistance from investigators in the United States, Europe, and Australia. In eight instances grants were made of sums varying from $500 to $1250. Six grants were made to American workers, and of the remaining two one was to Dr. A. Besredka, of Paris, and the other to Dr. J. Abelin, of Berne. In their first statement regarding the purposes for which the fund would be used the trustees expressed themselves as follows. The object of the Foundation is to promote researches that are directed towards the solution of problems in medicine and surgery or in branches of science bearing on medicine and surgery. As a rule preference is given to researches on a single problem or on closely allied problems. Grants may be used for the purchase of apparatus and supplies that are needed for special investigations. Stipends for the support of investigators will be granted only under exceptional circumstances. Applications should be sent to the secretary of the Executive Committee, Dr. Francis W. Peabody, Boston City Hospital, Boston, Mass., U.S.A.; applications for grants to be held during the year 1925–26 before May 15th, but if all the funds are not assigned in the spring, further consideration will be given to applications received before Sept. 15th. Applications should include statements as to the character of the proposed research, the amount of money requested, and the objects for which the money is to be expended.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—A meeting will be held at the Elizabeth Garrett Anderson Hospital on Feb. 10th, at 8.15 P.M., when a paper will be read on the Prevention of Puerperal Morbidity and Mortality: An Experimental Study in Clinical Obstetrics, by Miss Frances Ivens; Dr. V. Russell and Dr. Edith Phelps will also speak.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The fourth of the spring series of post-graduate lectures, arranged by the Fellowship of Medicine, will be delivered in the Barnes Hall at the Royal Society of Medicine, at 5.30 P.M., on Wednesday, Feb. 11th, by Dr. Andrew Balfour, who will show a cinematograph film on Malaria, with special reference to the Malaria Parasite as a Therapeutic Agent. This demonstration is open to all members of the profession, and no fee is charged for attendance.—In March courses will be held in Diseases of the Chest at the Brompton Hospital; Medicine, Surgery, and Gynæcology at the Royal Waterloo Hospital; Infectious Fevers at the North-Eastern Fever Hospital (Tottenham); Gynæcology at the Chelsea Hospital for Women; and an intensive course in General Medicine, Surgery, and the Special Departments at the Royal Northern Hospital, with which is associated the Royal Chest Hospital. Copies of the syllabus, together with the Fellowship Bulletin, may be had on application to the Secretary, at 1, Wimpole-street, London, W.

Appointments.

BAILEY, H., F.R.C.S. Eng., has been appointed Assistant Surgeon, Liverpool Royal Infirmary.

GOODWIN, A., M.D. Lond., F.R.C.S. Eng. and Edin., Surgeon to Out-patients, Chelsea Hospital for Women.

LACK, V. J., F.R.C.S. Edin., Lecturer in Midwifery and Diseases of Women, University of Birmingham

Manchester Royal Infirmary: PARKER, R. W., M.B., Ch.B. Vict., WILSON, S. P., M.Sc., M.B., Ch.B. Vict., ECCLESTON, C., M.B., Ch.B. Vict., SOMERFORD, A. R., M.B., Ch.B. Vict., WALKER, C. L., M.B., Ch.B Vict., House Physicians; DRINKWATER, S. W., M.B., Ch.B. Vict., MACGILL, A. H., M.B., Ch.B. Vict., HEYWORTH, A. H., M.B., Ch.B. Vict., CLEGG, S. F., M.B., Ch.B. Vict., BROWN, C. V., M.B., Ch.B. Vict., House Surgeons; HUNTER W. E., M.R.C.S., L.R.C.P., House Surgeon, Specials Department; ROBERTS, W. M., M.B., Ch.B. Vict., Junior Pathological Registrar.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen University.—Second Asst. in Pathology. £250.

Bath, Royal United Hospital.—Hon. S.

Bethnal Green Children's Homes, Leytonstone.—Dental Surg. £2 2*s.* per session.

Bethnal Green Hospital.—Dental Surg.

Birmingham and Midland Eye Hospital.—H.S. £110.

Bolingbroke Hospital, Wandsworth Common, S.W.—Res. M.O. (male) £200. Also H.S. (male) at rate of £120.

Bristol, Cossham Memorial Hospital, Kingswood.—Res. M.O. £150.

Cardiff City Mental Hospital, Whitchurch, near Cardiff.—Res. Clin. Asst. 50 guineas for six months.

Cardiff Union.—M.O. £568.

Carlisle, Cumberland Infirmary.—Res. M.O. £165 as H.P. and £185 as H.S. Also Jun. H.S. at rate of £145.

Chelsea Hospital for Women, Arthur-street, S.W.—Reg. £50.

Chesterfield and North Derbyshire Royal Hospital.—Cas. and Orthop. H.S. at rate of £150.

Colchester, Essex County Hospital.—H.S. £200. Also Asst. H.S. and Registrar. £150.

Coventry City.—Temp. Asst. M.O.H. £60 per month.

Dewsbury County Borough.—Asst. Sch. M.O. and Asst. M.O.H. £600.

Dorset Mental Hospital, Herrison, near Dorchester.—Third Asst. M.O. £300.

Dublin, Dr. Steevens' Hospital.—Hon. Obstet. P. and Gynæcologist.
Exeter, Royal Devon and Exeter Hospital.—Sen. H.S. £250.
Finchley Urban District.—M.O.H. and Sch. M.O. £900.
Hastings, Royal East Sussex Hospital.—Hon. Radiologist.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Med. Reg. £100.
Lanark County.—M.O.H. £1300.
Leeds University, Dept. of Pathology and Bacteriology.—Lecturer in Bacteriology. £500.
Leicester, City Mental Hospital, Humberstone.—Second Asst. M.O. and Pathologist. £700.
Leicester, Isolation Hospital and Sanatorium, Groby-road.—Res. M.O. £350.
Leicester Royal Infirmary.—H.P. £150.
Lincoln City and County Borough.—M.O.H. £900.
Madras and Southern Mahratta Railway Co., Ltd.—Dist. M.O. Rs.1550 per mensem.
Maidstone, Kent County Ophthalmic Hospital.—H.S. £300.
Manchester, Monsall Hospital for Infectious Diseases.—First Asst. M.O. £600. Also Jun. Med. Asst. £350.
Manchester, St. Mary's Hospitals.—Res. Obstet. O. and Res. Surg. O. Each £200.
Ministry of Pensions, Birmingham, Highbury Hospital.—Jun. M.O. £350.
Nottingham General Hospital.—Pathologist. £350 and private fees allowed.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—H.S. at rate of £100.
Royal Chest Hospital, City-road, E.C.—Phys. Also M.O. in charge of Tuberculosis Dispensary. £750.
Royal Free Hospital, Gray's Inn-road, W.C.—Cas. O. £100.
Royal London Ophthalmic Hospital, City-road, E.C.—Sen. H.S. £150.
Royal Northern Hospital, Holloway, N.—Res. M.O. £200. Also Asst. Surg. O. £150.
St. Mary's Hospital, W.—Second Asst. Pathologist. £250.
Salisbury, General Infirmary.—H.S. £150.
Weir Hospital, Grove-road, Balham, S.W.—Sen. Res. M.O. £150.
West End Hospital for Nervous Diseases.—Asst. S., P. for Skin Dept., H.P. for In-patients. £150. Also Clin. Asst. in Speech Dept.
West Ham County Borough.—Asst. Sch. M.O.'s. £600.
West London Hospital, Hammersmith-road, W.—Hon. Surg. Reg. £100.
Worcester General Infirmary.—Sen. Res. M.O. £180.
York City Council.—M.O.H. and Sch. M.O. £1000.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Penmachno, Carnarvon; Forfar, Forfar; and Bognor, Sussex.

The Secretary of State for the Home Department gives notice of a vacancy for an additional Medical Referee under the Workmen's Compensation Act for the Bishop's Waltham, Petersfield, and Portsmouth County Courts. Applications, preferably from medical practitioners resident in Portsmouth, should reach the Private Secretary, Home Office, S.W., not later than Feb. 21st.

Births, Marriages, and Deaths.

BIRTHS.

CORMACK.—At "Elmstead," Felpham, in Sussex, on Dec. 13th, to Major and Mrs. Cormack (I.M.S.), a son.
HUGHES.—On Jan. 30th, at Heylands, Chagford, Devon, the wife of Dr. H. L. Glyn Hughes, of a daughter.

MARRIAGES.

BRAITHWAITE—SHIPTON.—On Jan. 27th, at Littleham, Devon, John Braithwaite, M.D., D.S.O., to Margaret Shipton, of Isca House, Exmouth.
DUFF MILLER—WALLACE.—On Jan. 29th, W. Duff Miller, M.B., Ch.B., Flight-Lieut., R.A.F.M.S. Reserve, to Muriel, only daughter of the late A. K. Wallace, Esq., and Mrs. Wallace, of Broadstone, Dorset.
HORDER—GIVEN.—On Jan. 28th, at Mossley Hill Parish Church, Liverpool, Cecil Arthur Horder, M.B., F.R.C.S., to Jessie Given, daughter of Dr. and Mrs. Given, of Liverpool.

DEATHS.

BLACKLER.—On Jan. 31st, Henry John Blackler, M.B., D.P.H., of Reigate-hill, Reigate, aged 62.
KNOX.—On Jan. 30th, at Strathray-gardens, Eton-avenue, N.W., Dr. Hugh Knox.
MACCALL.—On Jan. 29th, at Wilbury-road, Hove, Sussex, William Maccall, M.D.
ROWS.—On Jan. 28th, at Prestwich, suddenly, after an attack of phlebitis, R. G. Rows, M.D.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

THE ROYAL SOCIETY, Burlington House, Piccadilly, W.
THURSDAY, Feb. 12th.—4.30 P.M. *Papers to be read:* H. Muir Evans: A Contribution to the Anatomy and Physiology of the Air Bladder and Weberian Ossicles in Cyprinidæ. (Communicated by Sir Arthur Keith, F.R.S.) J. S. Huxley: Studies on Amphibian Metamorphosis, II. (Communicated by Prof. E. S. Goodrich, F.R.S.)
Papers to be read in title only: Prof. A. Dendy, F.R.S.: On an Orthogenetic Series of Growth Forms in Certain Tetraxonid Sponge-Spicules. Dr. C. E. Walker: The Meiotic Phase in Triton (Molge vulgaris). (Communicated by Prof. J. B. Farmer, F.R.S.) W. E. Alkins: *Clausilia bidentata* (Ström) and *Cl. cravenensis* (Taylor): A Statistical Inquiry into the Relationship of Two Similar Species. (Communicated by Prof. A. E. Boycott, F.R.S.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, Feb. 9th.

WAR: at 5 P.M.
Paper:
Major A. T. Frost, R.A.M.C.: A Further Report on the Treatment of Gonorrhœa by Kataphoresis.

EPIDEMIOLOGY / COMPARATIVE MEDICINE / DISEASE IN CHILDREN } *Special Discussion* at 8 P.M.: The Control of Tuberculosis and the Milk-supply.
Speakers: Dr. Robertson (M.O.H. Birmingham), Dr. Niven (late M.O.H. Manchester), Lieut.-Colonel J. W. Brittlebank, Prof. S. L. Cummins, Mr. G. P. Male, Dr. M. J. Rowlands, Dr. Stenhouse Williams, and others.

Tuesday, Feb. 10th.

THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M.
Laboratory Meeting at the National Institute for Medical Research, Hampstead, N.W. (by invitation of Dr. H. H. Dale).
Demonstrations:
Dr. J. W. Trevan: A New Method of Studying Local Anæsthetic Action.
Dr. J. H. Burn and Dr. H. H. Dale: A Perfusion Apparatus for Isolated Organs.
Communication:
Dr. Hermann Knaus: The Action of Drugs on Conduction in the Uterus.
Discussion on
The Action of Histamine.
Speakers:
Dr. H. H. Dale, Prof. R. J. S. McDowall.

PSYCHIATRY: at 4.30 P.M.
Clinical Meeting at the Maudsley Hospital, Denmark Hill, S.E.
Tea will be provided at 4 P.M.

Wednesday, Feb. 11th.

SURGERY: SUBSECTION OF PROCTOLOGY: at 5.30 P.M.
Discussion on
Fistula, to be opened by the President, Mr. F. Swinford Edwards.
The following will also speak: Mr. J. P. Lockhart-Mummery, Sir Charles Gordon-Watson, Mr. H. Greeme Anderson, and others.

Thursday, Feb. 12th.

NEUROLOGY: at 8.30 P.M.
Discussion on
The Ætiology and Treatment of Subacute Combined Degeneration of the Spinal Cord, to be opened by Dr. A. F. Hurst and Dr. H. J. MacBride.

TROPICAL DISEASES AND PARASITOLOGY: at 5.30 P.M.
Papers:
Mr. A. F. MacCallan: Ophthalmology in Egypt.
Captain W. H. Dye, R.A.M.C.: Schistosomiasis and Splenomegaly in Nyasaland (illustrated with lantern slides and epidiascope).

OPHTHALMOLOGY:
Members of this Section are especially invited to attend the above Meeting.

Friday, Feb. 13th.

CLINICAL: at 5.30 P.M. (Cases at 5 P.M.)
Five Cases of Pituitary Disease will be shown by Sir Percy Bassett-Smith, Dr. Douglas Firth, and Dr. George Riddoch.
Dr. Parkes Weber will show a Case of Developmental Deformity of the Right Forearm similar to that sometimes met with in cases of multiple exostoses (diaphysial aclasis).

OPHTHALMOLOGY: at 8.30 P.M. (Cases at 8 P.M.)
Cases:
Mr. Lindsay Rea: Cases of Recovery from Pseudo-Tumour of the Orbit.
Mr. H. Neame: Case of Optic Nerve Tumour.
Mr. F. A. Williamson-Noble: Case of Optic Nerve Tumour.
Mr. R. S. Scott: Case of Optic Nerve Tumour.
Discussion on
The Ætiology of Miners' Nystagmus.
Speakers:
Dr. T. L. Llewellyn: General.
Prof. J. S. Haldane: Physiological Consequences of Work in very Dim Illumination.
Mr. H. S. Elworthy: The Quality of Illumination in Coal-mines.
Prof. E. L. Collis: Compensation as a Factor in the Occurrence of Miners' Nystagmus.
Mr. G. H. Pooley: The Personal Factor in the Causation of the Disease.
Dr. F. Robson: The Effect of Mine Gases.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Feb. 9th.—8.30 P.M., Discussion on the Treatment of Lymphadenoma, to be introduced by Sir Thomas Horder, followed by Dr. Herbert French, Dr. Neville S. Finzi, Dr. Robert Knox, and others.

BIOCHEMICAL SOCIETY.
MONDAY, Feb. 9th.—5 P.M. (Meeting in Biochemical Department, University College, W.C.).—*Communications:* H. J. Channon: Cholesterol Synthesis in the Animal Body. G. A. Harrison and H. J. Channon: Observations on the Composition of Subcutaneous Fat in Cases of Sclerema Neonatorum. C. R. Harington: 3:4:5 Tri-iodophenyl-pyrollidone-carboxylic Acid. J. C. Drummond and K. H. Coward: Further Observations on the Chemical Nature of the Vitamin Fraction of Cod-liver Oil. J. C. Drummond and K. H. Coward: Ultra-violet Radiation and Growth. S. Tsubura: Comparison of the Reducing Properties of Plain and Striated Muscle. P. Haas and T. G. Hill: An Oxygen Absorbing Mechanism in *Mercurialis perennis* and Accompanying Colour Changes. A. Wormall: The Tyrosinase-tyrosine Reaction: the Theory of Deamination. F. C. Happold and H. S. Raper: The Supposed Deaminising Action of Tyrosinase on Amino-acids. C. Rimington and H. D. Kay: The Phosphorus of Caseinogen (preliminary communication).

CHELSEA CLINICAL SOCIETY.
TUESDAY, Feb. 17th.—8.30 P.M. (in the clubrooms of St. George's Hospital), Sir Thomas Parkinson and Mr. A. R. Thompson will lead a discussion on the Diseases of the Climacteric Period in Both Sexes.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.
FRIDAY, Feb. 13th.—Dr. Harold Pritchard: Some Aspects of Modern Medicine.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND Lincoln's Inn-fields, W.C.
MONDAY, Feb. 9th.—5 P.M., Prof. V. E. Negus: Some Disorders of the Larynx.
WEDNESDAY.—5 P.M., Prof. R. Lawford Knaggs: Osteitis Deformans and its Relation to Fibrosa and Osteomalacia.
FRIDAY.—5 P.M., Prof. Stanford Cade: Regional Anæsthesia.
SATURDAY.—4 P.M., Sir D'Arcy Power: Hunterian Oration.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.
MONDAY, Feb. 9th, to SATURDAY, Feb. 14th.—WEST LECTURE HALL, Royal Society of Medicine, 1, Wimpole-street, W. Demonstration arranged by the Fellowship of Medicine, and open to all members of the medical profession. Wednesday, Feb. 11th, 5.30 P.M., Dr. Andrew Balfour will show a Film on Malaria, with special reference to the Malaria Parasite as a Therapeutic Agent.—COMBINED COURSE IN DISEASES OF CHILDREN, Paddington Green, Victoria Hospital, and Children's Clinic. Two sessions daily as per syllabus.—LONDON LOCK HOSPITAL, 91, Dean-street, W. Comprehensive Course. Clinical work daily and lectures.—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C. Demonstrations daily in the various departments. Pathological demonstrations arranged for and Tuesday and Thursday special lectures. Tickets for this particular course from the Fellowship.—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh-gardens, N.W. Tuesday and Thursday, 2 P.M. Clinical Demonstration by Dr. G. C. Low and Dr. Manson-Bahr.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
TUESDAY, Feb. 10th.—4.30 P.M., Dr. J. Browning Alexander: Treatment of Pulmonary Tuberculosis, with special reference to Artificial Pneumothorax.
FRIDAY.—4.30 P.M., Dr. S. Cochrane Shanks: Electrodiagnosis.
Daily: In-patient and Out-patient Clinics in General and Special Departments, Operations, &c.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.
TUESDAY, Feb. 10th.—5 P.M., Dr. W. Griffith: Eczema.
THURSDAY.—5 P.M., Dr. W. Griffith: Eczema.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL POST-GRADUATE LECTURES, Marylebone-road, N.W.
THURSDAY, Feb. 12th.—5 P.M., Mr. A. W. Bourne: Treatment of Placenta Prævia.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Feb. 9th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Dr. Dowling: Skin Dept.
THURSDAY.—11 A.M., Sir Henry Simson: Gynæcological Wards. 2 P.M., Mr. MacDonald: Genito-Urinary Dept. 2 P.M., Mr. Bishop Harman: Eye Dept.
FRIDAY.—11 A.M., Dr. McDougal: Electrical Dept. 12 noon, Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE: FEB.–MARCH, 1925.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, Feb. 9th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., General Treatment of Paraplegia: Dr. Riddoch.
TUESDAY, Feb. 10th.—2 P.M., Out-patient Clinic: Dr. Adie. 3.30 P.M., Compression Paraplegia due to Tumours: Mr. Armour.
THURSDAY, Feb. 12th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., The Diagnostic Significance of Tremors: Dr. Risien Russell.
FRIDAY, Feb. 13th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Some Forms of Acute Encephalitis: Dr. James Collier.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.
THURSDAY, Feb. 12th.—12 noon, The Cerebro-spinal Fluid, Physiology and Pathology: Dr. J. G. Greenfield.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.
MONDAY, Feb. 9th.—12 noon, Afferent Paths and Physiology of Sensation: Dr. Hinds Howell.
The Fee for this Course will be £2 2*s.*
Dr. H. J. Macbride will give a COURSE OF EIGHT CLINICAL DEMONSTRATIONS, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays, if sufficient entries are received. The Fee for this Course will be £2 2*s.*
COURSE OF LECTURES AND DEMONSTRATIONS ON THE NEUROLOGY OF THE EYES.
WEDNESDAY, Feb. 11th.—3.30 P.M., The Optic Nerve: Mr. Leslie Paton.
Applications for this Course should be made early. Fee £5 5*s.* if taken as a separate Course, or £3 3*s.* if taken with the General Course.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.
Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.
J. G. GREENFIELD, Dean of Medical School.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Feb. 12th.—4 P.M., Mr. Barrington-Ward: Hernia.

ST. MARY'S HOSPITALS, MANCHESTER, POST-GRADUATE LECTURE (at Whitworth-street West Branch).
FRIDAY, Feb. 13th.—4.30 P.M., Mr. Morley: The Indications for Operation in Tuberculous Adenitis.

ANCOATS HOSPITAL, MANCHESTER.
THURSDAY, Feb. 12th.—4.30 P.M., Mr. Diggle: Diseases of the Œsophagus.

UNIVERSITY OF LIVERPOOL POST-GRADUATE LECTURES. (At 3.30 P.M.)
MONDAY, Feb. 9th.—(At the Children's Hospital.) Mr. Thompson: Congenital Pyloric Stenosis.
TUESDAY.—(At the Southern Hospital.) Mr. Nuttall: Surgical Cases.
WEDNESDAY.—(At the Northern Hospital.) Dr. Leith Murray: Sterility.
THURSDAY.—(At the Stanley Hospital.) Dr. Oram: Radiology of Fractures.

ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.
TUESDAY, Feb. 10th.—4 P.M., Dr. Bryson and Dr. Orr: Review of Cases Illustrating the Relation of Cardio-vascular Disease to the Kidney. Discussion.

THE PEOPLE'S LEAGUE OF HEALTH.
Lectures on What We Should Eat and Why, at the Medical Society of London, 11, Chandos-street, W.
WEDNESDAY, Feb. 11th.—6 P.M., Prof. R. H. A. Plimmer: Diseases Caused by Badly Chosen Diets.

THE INSTITUTION OF HEATING AND VENTILATING ENGINEERS, Victoria-street, S.W.
WEDNESDAY, Feb. 11th.—2.30 P.M. (At the Old Colony Club, Aldwych House, W.C.) Mr. A. H. Barker, B.Sc. (Past President): Unsettled Questions in Heating and Ventilation.

Notes, Comments, and Abstracts.

FOLK MEDICINE.*

BY WILLIAM MURPHY, M.B., CH.B. LEEDS.

FOLK medicine belongs neither to any one period of time nor to any particular race. It arose with the dawn of man's intelligence. It seems likely that it is far older than even the incredibly ancient mythic traditions of the great primitive races, just as it has persisted long after they have passed into oblivion. Folk medicine belongs rather to a stage in mental evolution than to any period in time, and that many of us have not yet passed beyond that stage we have frequent and convincing proof. We still find people who rub styes with wedding-rings, who carry potatoes as a charm against rheumatism, who spit on warts—and even some who believe that Kruschen salts will rekindle the fires of their lost youth. What some of us may be less ready to admit is the connexion between recognised medicine and the crude and superstitious remedies of the witch or the ignorant housewife. The Edinburgh Pharmacopœia of 1737, which, we are told, was in request all over Europe, and which aimed at a reformation of pharmacy, yet contained such choice ingredients as the juice of woodlice, dried toads, powdered skulls, human fat and urine. The last has apparently not yet disappeared from the pharmacopœia of superstition. I know of a doctor who, having asked a patient for a specimen of urine, only obtained it after pledging his word that he would not put it in the medicine. After studying a "Materia Medica" so comprehensive as this, one feels that imagination has indeed failed modern pharmacologists. There is, however, one ancient superstition, formerly current in the profession, which cannot be said to have disappeared from it. Chaucer's doctor, we are told, loved "gold in especial" *because* it was a "cordial in physic." In spite of the growth of scientific knowledge, this strange affection has persisted in our midst, and I doubt not that the reason for it is not very different from that at which Chaucer was slyly hinting.

Essentially, however, folk medicine, though it may from time to time have coloured the teachings and practice of the learned, belongs to the folk themselves, and since it is so intimately bound up with the history of human progress, it must of necessity have some interest to those in any way concerned with the development of human mentality and the relief of human suffering. Folk medicine grew out of man's daily needs and fears and beliefs. It was the outcome of his observation of the great primal facts of existence—birth, suffering, death. It was intimately associated with every aspect of primitive existence. It was part of primitive religion. Originally the doctor and the priest were one—a combination of functions which would nowadays, perhaps, cause many members of the profession some embarrassment.

The Mystery of Death.

To primitive man we may well believe that death was an insoluble mystery. Intellectual man has not yet discovered a wholly satisfactory explanation of death—or of life, although science has formulated and discarded many theories on the subject. The great French philosopher, Descartes (seventeenth century), actually believed that the pituitary gland was the bond between body and soul. One step forward, however, we have made. We have learned to regard death as a natural event. Primitive man—if we may draw conclusions from the beliefs of savage tribes still in existence—was quite unable to visualise it as a natural occurrence at all, possibly because in his experience it was so frequently associated with violence. He connected death with wild beasts, drowning, lightning, or—and this much more rarely—with mysterious affections of his body which he could not understand or account for. So he came to attribute death and all physical suffering to supernatural causes, of which there would seem to have been three of paramount importance: (1) The anger of offended spirits, (2) the supernatural power of an enemy, (3) the displeasure of the dead.

Spirits to our unsophisticated forefathers were an ever-present source of trouble, and disease was long regarded as a mark of the wrath of those powerful beings. Among certain Asiatic tribes a favourite treatment for disease of any kind was for the village sorcerer to thrash the patient until the demon was driven out of him. In Burmah, if thrashing proved ineffectual, the doctor was wont to trample on his patient's abdomen until he killed the demon.

In England the Devil was long credited with the power of inflicting disease and also, if he felt so inclined, of curing it. He seems indeed to have been held in some respect as the head of the medical profession—a view which doubtless still claims some adherents! Sir George Mackenzie, writing in the seventeenth century, states that "the Devil can cure disease because he knows its natural causes better than the physicians can, who are not present when diseases are contracted and who, *being younger than he*, must have less experience."

The power of enemies was scarcely less dreaded than the wrath of spirits. A curse was a potent cause of death or misfortune, though most commonly the desired effect was only obtained by the mediation of some person skilled in the practice of magic. The witch—or wizard as it sometimes was, though more rarely in England—might compass the evil by means of incantations or prayers—usually addressed to the Devil—but sometimes she required for the success of her spells something intimately associated with her destined victim, like a lock of his hair or a piece of his clothing. It seems probable that the old-fashioned nurse's eagerness to commit at once to the fire such things as pieces of nails or hair arose out of nothing more hygienic than this old superstition. A method still more favoured by the witches was the burning of a waxen or wooden image of the person upon whom the spell was to work, in the belief that as the wax melted or the wood charred so the body of the victim wasted or was tormented. The "evil eye" was for centuries, and, indeed, in some places still is, an object of superstitious dread. One writer even tells us that the reason why surgeons do not show wounds to every man is that they have observed that the influence of some eyes hinders the process of healing.

The belief that the dead could cause suffering to the living probably belongs to a much later stage in the history of culture than either the fear of spirits or of witchcraft, and it has survived both of them. It is still commonly thought that if a corpse be allowed to remain in the house over a Sunday there will be two more deaths in the family. As late as 1887 the body of a woman who had died of phthisis was exhumed and her lungs burned because she was believed to be drawing the remaining members of her family into the grave after her. This story, I perhaps ought to add, comes from America, where perhaps even popular medicine may transcend common experience, as does the length of the American appendix! The belief in vampires is probably akin to this fear of the dead, a belief not yet extinct even in the civilised world. So recently as a couple of years ago a case was reported from Central Europe in which the body of a dead woman was taken from the grave and a stake driven through her heart—that having been for centuries the recognised means of dislodging the evil creature which was using the dead body to pursue its hideous work.

To say that all misfortune was attributed to one of these three great causes would, of course, be inaccurate, but they were the most potent influences for evil and the most dreaded.

Cure by Transference.

Having discovered for himself a satisfactory reason for his troubles, man naturally turned his mind to what concerned him much more nearly—namely, the curing of them. Disease, he noticed, was frequently though mysteriously conveyed from one person to another, and from this observation he deduced a simple means of ridding himself of his aches and pains. He argued that, since a witch or a spirit could inflict disease upon a man, surely that man ought in turn to be able to transfer it to some creature inferior to himself—a slave or an animal. There were innumerable methods of effecting this transference, the simplest of which was, perhaps, that in which the patient was recommended to sit on a donkey with his face to the tail and wait for his pain to be transmitted to the animal. Ague was cured by more unpleasant though possibly less tedious treatment. The patient, having been securely pegged to the trunk of an oak-tree by a lock of his hair, was bidden to free himself by a sudden wrench, the theory being that as the lock of his hair was transferred to the tree so also was the ague. The physician of James I., Sir Kenelm Digby, treated toothache by cutting the gum with an iron nail and then driving the nail, when it was satisfactorily covered with blood, into an oak beam, a treatment which he claimed to be infallible. Witches were commonly credited with the power of transferring disease—a belief not inconvenient for the medical practitioner, since any failure on his part to obtain a cure was regarded as strong evidence that his patient was bewitched.

Cure by Association.

Cure by association was another popular type of remedy, closely resembling in many cases cure by transference and not always to be distinguished from it. The vulgar direction to "take a hair of the dog that bit you" did not originally mean that you were to have another glass on the morning after, but was intended literally. Dog's hair was commonly applied in cases of dog-bite, being considered especially efficacious if you could procure the hair of the actual offender. In cases of hydrophobia dog's liver was administered to the patient. A case is on record in which a mad dog was drowned and after nine days its body was recovered in order that its liver might be given to a child whom it had infected. The

* A paper read before the Leeds University Medical Society.

chronicler naïvely adds that the child died. It was common among recognised practitioners as late as the seventeenth century to treat the weapon with which a wound was inflicted and not the wound itself—a custom probably fraught with much less danger to the patient. Boyle, in his "Usefulness of Experimental Philosophy," tells of a doctor who, suffering from some apparently incurable disease, was advised to boil an egg in his own urine and bury the egg in an anthill, in order that as it wasted his disease might abate, and—says the great scientist—he found the treatment eminently successful.

As might be expected, many folk-remedies were connected with the offering of sacrifice, though few of them have survived into modern times, possibly on account of their intimate association with pagan religion. A belief which may certainly be said to have been similarly associated, but of which traces still remain, was that in the possibility of entering life afresh by a symbolical "new birth." We still find that in certain districts mysterious powers are attributed to trees whose trunks have split in such a way that it is possible for a person to pass through them—an action which signified that the patient entered upon a new life, leaving behind him all his old pains and troubles. Croker, in his "Legends of Killarney," relates how he came across a tree of this kind and was urged by his guide not to lose the chance of squeezing through. On inquiring the reason he received the following reply: "It will ensure your honour a long life, and if only you was a lady in a certain way, there'd be no fear of you after going through"!

Superstitions and Charms.

The spread of Christianity, whilst it tended to discourage many old pagan beliefs, brought in its train new superstitions. There are still extant many old prayers and invocations which are really nothing more nor less than charms. The sign of the cross, as might be expected, plays a very important part in popular medicine. It served not only to keep away devils of every description, but it was also an infallible protection against the "evil eye." Made in saliva upon a foot which had gone to sleep, its effect was instantaneous. It certain parts of England the patient with ague makes three crosses in white chalk upon the chimney back, and as they slowly blacken with the smoke his disease is supposed to abate. Children with whooping-cough are commonly given a ride on a donkey, because of the cross on its back, supposed to have been imprinted there after the triumphal entry of Christ into Jerusalem. Hairs from the animal's back are, for the same reason, credited with miraculous power. The family doctor might care to know that, hung in a bag round a child's neck when teething, they are very efficacious as a preventive of fits!

Difficult to understand—in view of man's fear of the dead—is the faith placed in the healing properties of objects associated with death. Various parts of a dead body were believed to be possessed of healing properties. A powder made of human bones was commonly administered in cases of epilepsy, and a volatile salt extracted from human skulls was among the remedies prescribed in 1680 by the 14 physicians who attended Charles II. in his last illness—which is now believed to have been an apoplectic seizure. Much of the body-snatching of the seventeenth and eighteenth centuries is doubtless to be attributed to this superstitious belief in the virtue of the dead body. Faith was placed even in the touch of a corpse's hand, and at one time sufferers attended executions in great numbers in order to receive what was known as the "dead-stroke," the fee for the privilege being collected by the hangman!

Such details as colours and numbers were important factors in the art of healing, as practised by the ignorant. Red has always been popular in folk-medicine, and is to this day; we probably have most of us come across people who swear by red flannel as a preventive of chest troubles, and will accept material of no other colour. The following is the time-honoured method of treating a stye:—Catch a *black* tom-cat on the first night of the new moon, pluck a hair from the end of the tail, and it will be found that after the stye has been rubbed with the hair *nine* times, it will gradually disappear. Blood from the same cat's tail was supposed to have a beneficial effect when applied to shingles. While on the subject of colour, may I warn all of you that it is extremely dangerous to pass a white horse without spitting at it! Among the numbers, none is so popular as three and its multiples. If a snake be allowed to crawl nine times across a swelling in the neck the swelling will disappear. A child suffering from whooping-cough should be passed three times under and over a donkey on nine consecutive days—another cogent reason why the family doctor should invest in one of these useful animals. The cure for epilepsy was to go head-first down three flights of stairs on three successive mornings!

The Influence of the Moon.

That the moon should be regarded with superstitious awe is not surprising. Galen himself believed that the moon controlled fits of epilepsy, and it is only comparatively recently that the association between the moon and lunacy was officially discarded by the profession. It is a persistent belief that death commonly occurs at low tide—the tides being simply a manifestation of the potent influence of the moon. The death of the immortal Falstaff will be familiar to all of you. "'A parted," says the hostess of the Eastcheap Tavern, "'A parted even just between twelve and one, ev'n at turning o' the tide." Still better known is the description of the death of old Barkis—"'He's agoing out with the tide,' said Mr. Peggotty to me, behind his hand. My eyes were dim, and so were Mr. Peggotty's. 'With the tide?' 'People can't die along the coast,' said Mr. Peggotty, 'except when the tide's pretty nigh out. They can't be born unless it's pretty nigh in—not properly born till flood. He's agoing out with the tide. It's ebb at half arter three, slack water half an hour. If he lives till it turns, he'll hold his own till past the flood and go out with the next tide.'" Then a little further on we read: "I was on the point of asking him if he knew me when he tried to stretch out his arms and said to me distinctly with a pleasant smile: 'Barkis is willin'.' And, it being low water, he went out with the tide."

Apart from these somewhat general superstitions, domestic medicine, of course, recognised healing virtues in innumerable common objects and even in certain individuals. A seventh son was always believed to be possessed of remarkable power, and was from infancy a useful source of income to his parents. That marvellous cures should be performed by a twenty-eighth son born without the intervention of a daughter, is perhaps hardly surprising. Warts might be speedily removed by rubbing them against the person of the father of an illegitimate child, a treatment which we may imagine was not always devoid of excitement. Animals were credited with all kinds of powers. The head of a mad dog powdered and mixed with wine cured jaundice. A horse hair on a slice of bread-and-butter was given to children with worms in the hope that it would choke the worms. Both witches and the medical profession regarded the hare with peculiar favour. Its brain was good for over-sleeping; its lungs healed sore eyes; and the whole animal, skin and all, baked to powder was, we are told, "wonderful good for the stone."

Conclusion.

How many of these old remedies are still in use it is difficult to say, but belief in them dies hard, and we may safely conclude that in private many of them are still resorted to by the ignorant. Victor Hugo says somewhere that when you have killed ignorance, you will have destroyed crime. We may perhaps adapt that to our subject and say that when we have killed ignorance we shall have destroyed superstition. But ignorance can hardly be said to have disappeared whilst we still have in our midst the old man who, having told the doctor his old woman had a pain in her brains, and being asked where she kept her brains, clapped his hand to his abdomen and said, "Why here, Doctor, o' course, in her belly"!

HEALTH CONDITIONS IN KENYA COLONY AND PROTECTORATE.

IN the report for 1923, just issued, it is stated that no census of the non-native population has been taken since 1921, and the native population is the subject of a rough estimate only. The registration of European births is compulsory, and the relative statistics for 1923 are as follows: Births 194, or a crude rate of 20·1 per 1000; deaths 65, or a crude rate of 6·6 per 1000. The respective figures for 1922 were 27·04 and 9·04. Reliable figures of these rates amongst Asiatics and Africans cannot be given, but, taking the total population of certain towns and the total number of deaths reported, it appears that in Mombasa the crude death-rate was 16·6 per 1000 as compared with 16·7 in 1922; in Nairobi it was 23·5 as against 21. The population figures are recorded in the census report as: Europeans 9651, Indians 22,822, Goans 2431, Arabs 10,102, others 627—a total of non-native population of 45,633. The native population is estimated at 2,500,000. Though no epidemic occurred during 1923 there was a disquieting prevalence of small outbreaks of plague. None of these was severe, but it is clear that the range of this disease is spreading, and as the resources of the country are developed it may be expected that the incidence of plague will also grow. Further research work into the epidemiology of plague is necessary. Vaccine is now produced locally in the bacteriological laboratory. The incidence of pneumonia during 1923 calls for remark. The figures from five sources outside the reserves show that 1223 cases were treated, of which 385 terminated fatally, a percentage of 31·5. Included in these are the figures from the Nasin Gishu Railway, where, owing to climatic and other conditions, the incidence and mortality were higher than elsewhere.

Though many more natives applied for treatment for leprosy in 1923, it is not considered that this disease is extending, but rather that confidence in Government doctors is increasing. During the year 236 cases were reported, as compared with 81 in 1922; the bulk of this increase occurred in Chuka, Kisii, and Kakamega. Accommodation for lepers has been provided at these stations. There are also leper establishments at Malindi and Lamu, in which respectively 48 and 8 lepers are resident.

Considerable progress was made in the medical work in native reserves during the year. The total number of in-patients treated at hospitals in 1923 was 32,229, as against 37,384 in 1922, but the number of out-patients increased from 165,538 to 245,554, owing to the greater use made of the 46 sub-dispensaries in charge of African dressers, at which 110,509 patients were treated. No new central hospitals were opened in 1923, but some idea of the extent of the activities of the doctors in charge of these African hospitals is obtained by a glance at the figures of the three essentially native reserve stations, and, in order to show how the work has expanded, comparative figures for 1922 are also given:

—	In-patients.		Out-patients.		Out-dispensaries and treated by medical officer on tour.	
	1922	1923	1922	1923	1922	1923
Chuka . ..	4470	3757	552	1775	—*	5,672
Kisii	5624	2796	3,565	8306	—*	22,811
Kakamega .	2179	1105	27,071	9271	—*	28,017

* Included under out-patients.

There was a great extension of the medical campaign against yaws; 64,344 cases were treated, compared with 34,233 in 1922, and this increase has been made possible by the more frequent tours of medical officers, and, in the Fort Hall district, by the stationing at the out-dispensaries of African dressers specially trained to give injections of bismuth. The expansion of this campaign was facilitated by the perfection and use of extremely inexpensive substitutes for novarsenobillon, and there has resulted a most marked and welcome change in the attitude of natives to the European doctor; whereas formerly the doctor and the hospital were feared, now natives have gained confidence from the knowledge that thousands of their fellows have been quickly cured of a widespread crippling disease. This is shown by the increased number of applicants for admission to hospital, and of those who are willing to submit to prophylactic treatment against such menaces to public health as plague and small-pox. In 1922, 18,737 persons were inoculated against plague, and 57,246 were vaccinated. In 1923 the respective figures were 122,460 and 56,345. The accommodation of the native hospitals at Mombasa, Nairobi, and Kisumu has been severely strained (the total accommodation at Nairobi is 190 cases), and during the year extensions were added—e.g., a dysentery ward at Nairobi and at Kisumu a new ward with 20 beds.

The training centre for African dressers is the Nairobi Native Hospital, where quarters for 15 learners have been provided. A beginning has also been made with the training of African dispensers. It is also the case that at the Bacteriological Laboratory six Africans were engaged in 1922, and are making good progress. A curriculum has been drawn up, and in the course of a few years (the normal training period will be three years) African assistants will, it is hoped, be ready for drafting to out-stations and be capable of performing all the more ordinary microscopical and other examinations required in the routine work of a hospital.

Attention is directed to the action taken to reduce drunkenness in native reserves by the enactment of the Sugar Ordinance Act, 1923. In certain native reserves, especially the Akamba Reserve, there has been prolific cultivation of sugar-cane. The cane was sold to millers, crushed into jagree, and re-sold to the natives, who then allowed it to ferment. Drunkenness increased to such an alarming extent that it became of vital importance to the well-being of the tribe to prohibit the manufacture of jagree. The new Ordinance prohibits the supply to a native, directly or indirectly, of sugar juice extracted by the use of any machinery designed for or capable of producing sugar juice, and the possession of a mill or other apparatus within proclaimed areas except under permit from the Government.

The rainfall in 1922 over the country as a whole was deficient, though on the coast that year was the wettest on record. In 1923 the rainfall was abundant and well-distributed—a fact exemplified no less by the abundance of crops than by the statistics of the various stations. As regards rainfall, Kenya may be divided into three parts. In the northern deserts, in Jubaland, and in the tracts of Tanaland the rainfall is less than 20 inches a year. The coastal strip and the Nyanza and Kikuyu provinces have between 40 and 80 inches, and the remainder of the country from 20 to 40 inches of rain a year. At the coast the climate is tropical, though the temperature at Mombasa seldom rises above 87° F. in the shade. Up-country the heat is rarely intense, and in the cold season fires at night are welcome. Throughout the country the direct actinic ray compels the wearing of helmets or terai hats from 8 A.M. to 4.30 P.M.

FIRST-AID FOR THE CAR.

A LITTLE handbook entitled First Aid for the Car has been recently issued by Sterns, Ltd., and may be obtained free of charge on application to them at Royal London House, Finsbury-square, London, E.C. 2. It measures only 4¼ in. by 2¼ in., but its 24 pages contain information which may be of great value to the puzzled amateur. It is arranged in tabular form under the headings symptoms, cause, and remedy for each vital system of the car. For example, under the section headed magneto we find various possible causes for absence of spark or misfires, with the appropriate treatment. Some of the treatment suggested is easier to read about than to carry out, even for the professional repairer, and to the ordinary owner-driver the handbook will probably be more useful as an aid to diagnosis. The two pages devoted to the motorist's own troubles should be revised or omitted. The application of arnica to bruises, the stimulation of a concussed patient, and the administration of brandy in sunstroke are not the methods that would now be advised by doctors, nor is the application of cold to the spine the best treatment for nose-bleeding.

DONATIONS AND BEQUESTS.

Alderman J. Harrison Jones, J.P., left £1000 to Liverpool University, £500 each to the Royal Infirmary, the Southern Hospital, the Bluecoat Hospital, and the Northern Hospital, Liverpool.—Glasgow University students, in a carnival on Jan. 17th in aid of local infirmaries and charities, collected over £700.—Mr. David Dunlap, of Northern Ontario, bequeathed £50,000 each to the Victoria University and the Toronto General Hospital.—During the past month the governors of the Royal Manchester Children's Hospital have received legacies and subscriptions amounting to over £2900, including legacies of £1000 from John G. Litton, £350 from the trustees of the late Mrs. Eliza Smith for X ray apparatus for the hospital, £500 from the Bleachers' Association; Booth charities, £250; Queen Alexandra Flower Carnival, £272; and the executors of the late Mrs. J. W. Burden, £100.—Mr. Frederick Ralph Norman Kendall, of Loxley, Warwick, left £1000 to Dr. Barnardo's Homes; £500 to Stratford-on-Avon, Hospital; £300 to Stratford-on-Avon Nursing Home; and £200 to the Society for the Prevention of Cruelty to Children.—The Chelsea Hospital for Women has received from the trustees of the Zuntz Bequest, £600 towards the upkeep of its Annie Zuntz Floor.—Mr. John Henry Beeby, Peterborough, left £1000 to Peterborough Infirmary and Dispensary, and £500 to the National Children's Home and Orphanage.—Mrs. Margaret Booth Leach, Bournemouth, bequeathed a legacy of £500 to the Wigan Infirmary.—Sir Harold Bowden has sent a donation of £1000 to the Nottingham Cripples' Home.—Mrs. Annie Elizabeth Lee, of Thorp Arch, Yorks, left £500 each to the Leeds General Infirmary, the Leeds Women's and Children's Hospital, Cookridge Home, and similar amounts to other Leeds non-medical institutions. After fulfilment of personal bequests part of the residue will go to the Women's and Children's Hospital.—The late Colonel Sir Arthur Lever left, among other bequests, £500 to the Leicester Infirmary and £500 to the Middlesex Hospital.—By the will of the late Miss Sophia Hewitt, of Dedham, near Colchester, the testatrix left, among other bequests, £2000 to the British Home and Hospital for Incurables; £2000 to the Eastern Counties Institution for Idiots, Colchester; and £1000 each to the Association in Aid of the Deaf and Dumb, the Surgical Aid Society, and the Zenana Bible and Medical Mission.—Mr. Edward Thomas Duncombe Stokes, Woodford, Essex, left £1000 to the City of London Hospital for Diseases of the Chest, Victoria Park.—After the fulfilment of certain personal and other bequests the residue of his property, amounting to £8328, has been left by the will of the late Mr. H. C. Durham, of Bedford, to Bedford County Hospital.—Mr. George Somervell, Windermere, bequeathed £500 to the Westmorland County Hospital and a similar sum to the London Association in aid of the Moravian Missions for the Leper House at Jerusalem.—Sir Harry James Veitch, the well-known horticulturist of South Kensington and Chelsea, who left property of the value of £79,395, gave £1000 to Dr. Barnardo's Homes and a similar amount to five other societies and missions.